Musculoskeletal Care Modalities
A cast is a rigid external immobilizing device that is molded to the contours of the body. The purposes of a cast are to immobilize a body part in a specific position and to apply uniform pressure on encased soft tissue.
**Short arm cast:** Extends from below the elbow to the palmar crease, secured around the base of the thumb. If the thumb is included, it is known as a *thumb spica* or *gauntlet cast*.

**Long arm cast:** Extends from the upper level of the axillary fold to the proximal palmar crease. The elbow usually is immobilized at a right angle.
Short leg cast: Extends from below the knee to the base of the toes. The foot is flexed at a right angle in a neutral position.

Long leg cast: Extends from the junction of the upper and middle third of the thigh to the base of the toes. The knee may be slightly flexed.

Body cast: Encircles the trunk.
Nursing Interventions:

• EXPLAINING THE TREATMENT REGIMEN

• RELIEVING PAIN: Most pain can be relieved by elevating the involved part, applying cold as prescribed, and administering usual dosages of analgesics.

• IMPROVING MOBILITY

• PROMOTING HEALING OF SKIN ABRASIONS
• MAINTAINING ADEQUATE NEUROVASCULAR FUNCTION

• MONITORING AND MANAGING POTENTIAL COMPLICATIONS:

1. Compartment Syndrome
2. Pressure Ulcers
3. Disuse Syndrome
External fixators are used to manage open fractures with soft tissue damage. They provide stable support for severe comminuted (crushed or splintered) fractures while permitting active treatment of damaged soft tissues.
Managing the Patient with an External Fixator:

- An external metal frame attached to & stabilize bone fragments

- Used to manage open fractures with soft tissues damage, while permitting active treatment

- A series of pins inserted in the bone fragments to reduce, aligned & immobilize fracture

- Pins Position maintained through attachment to the portable frame

- Facilitates Pt comfort, early mobility & exercise
Nursing Interventions

1. Psychological preparation for application of Fixator
2. Cover Sharp Points on the fixator or Pins
3. Elevate Extremity to reduce swelling
4. Monitor Neurovascular status every 2hrs
5. Assess site of pins for redness, drainage, tenderness pain & loosening of pins
6. Care of pin’s tract each one separately 3 times/day
7. Never adjust the clamps rather the physician dose so
Managing The Patient in Traction

It is the application of pulling force to a part of the body

Traction used to:-

1. minimize muscle spasm
2. Reduce & immobilize fracture
3. Reduce deformities
4. Increase space between opposing surfaces

Types

1. Skin Traction
2. Skeletal Traction
Principles of Effective Traction:-

1. Countertraction must be used for effective traction
2. Traction must be contentious & never interrupted
3. Any factor might reduce traction must be eliminated
4. Good body alignment
5. Ropes must be unobstructed
6. Weight must be free & not rest on the bed or floor
7. Knots in the rope or footplate must not touch the pulley or the foot of the bed
**Figure 67-3** Traction may be applied in different directions to achieve the desired therapeutic line of pull. Adjustments in applied forces may be prescribed over the course of treatment.
1. **Skin Traction**
   - Used to control muscle spasm & to immobilize an area before surgery
   - Weight applied must not exceed the tolerance of skin (no more than
     
     1. **for extremities** 2-3.5 kg “4.5-8 lb”
     2. **for pelvic** 4.5-9kg “10-20lb”
FIGURE 67-4 Buck’s extension traction. Lower extremity in unilateral Buck’s extension traction is aligned in a foam boot and traction applied by the free-hanging weight.
Complications
1. Skin breakdown
2. Nerve pressure
3. Circulatory Impairment

Nursing Interventions
1. Ensure effective traction
2. Monitor & Managing potential complications
FIGURE 67-5 Balanced suspension skeletal traction with Thomas leg splint. The patient can move vertically as long as the resultant line of pull is maintained.
2. Skeletal Traction:

- A traction applied directly to the bone
- It used for fractures of femur, tibia, humerus, and the cervical spine
- Performed under a septic technique & local Anesthesia
- The weight applied: kg (15-25 lb) to achieve therapeutic effect
- When X-ray disclose callus formation skeletal traction discontinue & the extremities generally supported
- Cast & splint applied to support healing bone
Nursing Intervention

1. Maintaining effective traction

**NURSING ALERT** The nurse must never remove weights from skeletal traction unless a life-threatening situation occurs. Removal of the weights completely defeats their purpose and may result in injury to the patient.

2. Maintaining positioning “foot support”
3. Preventing skin breakdown
4. Monitoring neurovascular status
5. Providing pin site care “8 hrs inspection”

**NURSING ALERT** The nurse must inspect the pin site at least every 8 hours for signs of inflammation and evidence of infection.

6. Promoting exercises
Thank you