

ORTHOPEDIC CARE

Module 12

I. Statement of Purpose

The purpose of this module is to prepare the nurse assistant to recognize the special needs of orthopedic patients and to appropriately perform skills necessary for their care.

II. Terminology

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|-------------------------------------|---|
| 1. Abduction | 29. Immobility |
| 2. Abductor pillow | 30. Intercostal |
| 3. Adduction | 31. Joint replacement |
| 4. Amputation | 32. Laminectomy |
| 5. Arthritis | 33. Ligament |
| 6. Arthroscopy | 34. Lumbar |
| 7. Atrophy | 35. Neurovascular check |
| 8. Bursitis | 36. Non-union |
| 9. Carpal tunnel | 37. Objective signs/symptoms |
| 10. Cartilage | 38. Open reduction internal fixation (ORIF) |
| 11. Casts | 39. Orthopedic devices |
| 12. Cervical | 40. Osteoarthritis |
| 13. Compartment syndrome | 41. Osteoporosis |
| 14. Continuous passive motion (CPM) | 42. Pelvic |
| 15. Countertraction | 43. Phantom pain |
| 16. Degenerative joint disease | 44. Rheumatoid arthritis |
| 17. Dorsiflexion | 45. Sequential compression devices (SCD) |
| 18. Ecchymosis | 46. Serous |
| 19. Extension | 47. Soft goods |
| 20. Fat embolism | 48. Spica cast |
| 21. Fibromyalgia | 49. Subjective signs/symptoms |
| 22. Flexion | 50. Tendon |
| 23. Fracture | 51. Total hip precautions |
| 24. Full leg/lower leg | 52. Traction |
| 25. Fusion | 53. Trapeze |
| 26. Gout | 54. Vertebrae |
| 27. Hip transfer | |
| 28. Hypothermia care (polar care) | |

III. Performance Standards (Objectives)

Upon completion of 3 hours of class plus assignments and 4 hours of clinical experience, the learner will be able to:

1. Define basic terminology.
2. Describe the normal anatomy and physiology of the musculoskeletal system.
3. Describe common orthopedic diseases/disorders and related nursing care.
4. Identify common complications of the orthopedic patient.
5. Describe the purpose and role of the nurse assistant in performing neurovascular checks.
6. Describe the steps to prevent complications of immobility.
7. Describe the basic principles of traction and the role of the nurse assistant in caring for a patient in traction.

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8. Discuss the principles of cast care.
9. Identify and explain the purpose of specific orthopedic devices and the role of the nurse assistant.
10. State types of joint replacements and related care of patients.
11. Explain proper body mechanics when using assistive devices.
12. Describe the role of the nurse assistant in providing care to the orthopedic patient.

IV. References

1. Chancellor's Office, California Community Colleges (2004). *CNA Model curriculum*. Sacramento: Chancellor's Office, California Community Colleges.
2. Hegner, B. R., & Caldwell, E. (2003). *Nursing assistant: A nursing process approach* (9th ed.). Albany, NY: Delmar.
3. Sorrentino, S. A. (2004). *Mosby's textbook for nursing assistants* (6th ed.). St. Louis: Mosby Lifeline.

MODULE 12 - ORTHOPEDIC CARE

Content Outline Theory Objectives	Suggested Learning Activities/Evaluation	Clinical Activities
Objective 1 Define basic terminology A. Terminology B. Clinical application	A. Lecture/ Discuss B. Written test	
Objective 2 Describe the normal anatomy and physiology of the musculoskeletal system. A. Purpose and function of the musculoskeletal system 1. Frame 2. Shape 3. Movement 4. Protection B. Normal aging changes 1. Loss of muscle strength, size and tone 2. Slower muscle/nerve interaction 3. Postural changes 4. Loss of flexibility in joints 5. Loss of strength in bones (osteoporosis) 6. Loss of height	A. Lecture/ Discuss B. Written test	
Objective 3 Describe common orthopedic diseases/disorders and related nursing care. A. Fractures 1. Green stick 2. Comminuted 3. Impacted 4. Oblique 5. Spiral B. Inflammatory disease	A. Lecture/ Discuss B. Use diagrams/ Visuals C. Written test	Provides nursing care according to guidelines for the following: fractures, hot and cold treatments, range of motion, ADL, exercise and rest.

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Content Outline Theory Objectives	Suggested Learning Activities/Evaluation	Clinical Activities
1. Rheumatoid arthritis 2. Gout 3. Connective tissue diseases (lupus) C. Assist to maintain mobility, muscle strength and pain control 1. Hot and cold treatments a. Follow guidelines carefully. b. Verify exact instructions for any hot or cold treatment (correct temperature, length of treatment, area of body to receive treatment). c. Clarify operating instructions for any electrical equipment used in hot or cold therapy. d. <u>Never put hot or cold pads directly on skin</u> e. Observe skin for any change in color or texture, burns, redness, blisters every 10 to 20 minutes (or per facility policy). f. Report any complaints of pain, numbness or burning to licensed nurse. g. Never apply heat to inflamed, irritated joint (refer this treatment to RN). 2. Rest 3. Adaptive devices 4. Proper positioning 5. Range of motion D. Degenerative joint disease 1. Osteoarthritis E. Nursing Care 1. Prevent trauma to joint (repetitive stress, obesity, and strenuous activity all contribute to joint disease) 2. Heat 3. Rest joints 4. Orthopedic devices and braces to protect joints 5. Isometric exercises and correct positioning and posture		

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Content Outline Theory Objectives	Suggested Learning Activities/Evaluation	Clinical Activities
6. Reinforce occupational and physical therapy instructions 7. Assist with ADLs as needed, but maintain independence 8. Range of motion F. Fractures 1. See the following in this unit: a. Cast Care - Objective 8 b. Neurovascular Checks - Objective 5 c. Complications of Immobility - Objective 6		
Objective 4 Identify common complications of the orthopedic patient. A. Compartment syndrome 1. A result of limited space occupied by bone, blood vessels, nerves, muscles and soft tissues 2. Occurs after injury that results in swelling where there is no room for expansion (fracture, casts, restraints, trauma, frostbite, orthopedic surgery, burns) 3. Blood flow is interrupted resulting in ischemia, muscle damage, nerve damage and necrosis 4. Symptoms a. Pain b. Pallor c. Decreased pulses d. Paresthesia (burning or tingling) e. Numbness or decrease in sensation f. Paralysis g. Weakness 5. Report any of above symptoms immediately to the licensed nurse. 6. Nerve damage starts within 30 minutes (irreversible nerve damage in 1 - 2 hours) 7. Muscle damage starts in 2 – 4 hours	A. Lecture/ Discuss B. Return demonstration in skills lab C. Written test	Carefully observes patient for signs and symptoms of neurovascular compromise and reports findings promptly to licensed nurse.

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Content Outline Theory Objectives	Suggested Learning Activities/Evaluation	Clinical Activities
8. Usual management is elevating the affected area above the level of the heart and performing ROM. 9. Follow instructions given by licensed nurse. B. Embolisms 1. The movement of foreign material (blood clot, fat or air) to a point where it obstructs a blood vessel 2. Pulmonary embolism is the obstruction of one of the pulmonary arteries by a blood clot that usually moves up from the deep veins of the legs or pelvic veins. 3. Prevent by applying anti-embolic stockings as ordered, exercises given by licensed staff, early ambulation 4. Symptoms a. Shortness of breath b. Chest pain c. Cough d. Sweats e. Fever f. Cyanosis C. Dislocation 1. The displacement of a bone from its normal position in a joint 2. Symptoms a. Pain b. Deformity of joint or bone D. Nonunion 1. Failure of the fragments of a fractured bone to heal together		
Objective 5 Describe the purpose and role of the nurse assistant in performing neurovascular checks. A. Purpose of neurovascular checks: 1. Detect early signs of decreased circulation in the	A. Lecture/ Discuss B. Written test	Correctly performs neurovascular checks and reports any abnormal findings to licensed nurse.

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Content Outline Theory Objectives	Suggested Learning Activities/Evaluation	Clinical Activities
affected extremity 2. Prevent damage from pressure on peripheral circulation 3. Detect changes in nerve stimulation to affected extremity B. Components of neurovascular checks: 1. Color 2. Temperature 3. Capillary refill 4. Sensation 5. Edema 6. Movement 7. Pulse C. Nurse assistant's role in neurovascular checks (observation, not assessment)		
Objective 6 Describe the steps to prevent complications of immobility. A. Cause and prevention of complications related to immobility: B. Pressure Sores 1. Cause a. Pressure, friction, shearing force b. Improper positioning c. Not turning often enough d. Poor circulation e. Moisture f. Dry, cracked skin g. Irritation from urine and feces h. Poor nutrition and hydration i. Immobility 2. Prevention a. Frequent repositioning (may need to be every 1 to 2 hours).	A. Lecture/ Discuss B. Written test C. CNA-MC Module 14, objective 8, pp. 14.7 – 14.9: Preventing complications from inactivity	Reports any signs or symptoms of complications to the licensed nurse. Provides appropriate nursing care to prevent complications.

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Content Outline Theory Objectives	Suggested Learning Activities/Evaluation	Clinical Activities
b. Prevent friction and shearing during lifting and transfers. c. Keep head of bed less than 30° unless needed for feeding, treatments, etc. d. Provide good skin care. e. Check incontinent patients often. f. Avoid over-use of soap and vigorous rubbing. g. Apply lotion to dry skin. h. Keep linens clean and free of wrinkles. i. Prevent skin to skin contact as much as possible. j. Never rub or massage reddened areas. k. Report any signs of skin irritation to licensed nurse. C. Hypostatic Pneumonia 1. Cause a. Immobility, supine positioning for long periods of time b. Failure to cough and deep breathe c. Inability to remove or mobilize lung secretions d. Decreased fluid intake leading to thickened respiratory secretions 2. Prevention a. TCDB b. Early ambulation c. Frequent repositioning d. Adequate hydration e. Promptly report any signs of change in respiratory status to licensed nurse. D. Contractures 1. Causes a. Failure to perform range of motion b. Immobility (joints can stiffen within 24 hours) c. Muscle atrophy d. Joint deformity		

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Content Outline Theory Objectives	Suggested Learning Activities/Evaluation	Clinical Activities
2. Prevention a. Range of motion b. Proper positioning c. Reinforce occupational and physical therapy exercises d. Support hands, feet and joints in normal positions e. Footboards, trochanter rolls, handrolls, bed cradles f. Encourage self movement for independence (trapeze, bed mobility exercises) E. Constipation 1. Cause a. Low fiber diet b. Decreased fluid intake c. Inactivity d. Side effects of medication e. Aging f. Ignoring the urge to defecate or not being provided facilities or privacy to move bowel 2. Prevention a. Increase fluid and fiber in diet b. Increased activity (ambulation, up in chair, repositioning) c. Regular bowel care (suppositories and enemas per facility policy) d. Laxative medications as ordered by doctor (given by licensed nurse) e. Review of medications for constipating side effects (by licensed nurse) f. Provide privacy for bowel movements F. Deep vein thrombus (DVT) 1. Refer to Module 4- Objective 5 G. Urinary complications 1. Cause		

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Content Outline Theory Objectives	Suggested Learning Activities/Evaluation	Clinical Activities
a. Immobility b. Loss of bone minerals due to immobility can lead to kidney stones c. Incontinence and urinary tract infections due to inability to empty bladder 2. Prevention a. Adequate hydration b. Provide frequent toileting measures with proper positioning 1) Sitting on bed pan 2) Bed-side commode 3) Men stand at bedside to use urinal, if allowed c. Observe for pain under lower ribs in back and blood in urine d. Keep accurate intake and output H. Depression 1. Cause a. Social isolation and confinement b. Sleep disturbances c. Confusion and disorientation due to strange place and people 2. Prevention a. Open curtains during day b. Encourage visitors c. Group care measures to allow time to rest and sleep d. Introduce self and explain procedures e. Encourage activity f. Provide with reading materials if available		
Objective 7 Describe the basic principles of traction and the role of the nurse assistant in caring for a patient in traction. A. Principles of traction	A. Lecture/ Discuss B. Clinical Observation C. Written test	Utilizes and applies the principles of traction appropriately.

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Content Outline Theory Objectives	Suggested Learning Activities/Evaluation	Clinical Activities
1. Place a pulling force on bones to align 2. Immobilize and align fractures to promote proper healing or protect the injury until surgery 3. Relieve pressure on nerves that may be pinched in a joint 4. Relieve muscle strains or spasms B. Types of common traction: 1. Skin traction 2. Skeletal traction 3. Pelvic traction C. Role of nurse assistant in caring for patients in traction: 1. Weights off the floor 2. Appropriate patient body alignment 3. Countertraction (if ordered) 4. Skin integrity 5. Linens off the traction 6. Integrity of traction D. Role/limitations of the nurse assistant in the care of a patient in traction: 1. Keep covers off traction ropes and pulleys. 2. Check straps and belts for alignment and fraying; assure they are smooth and properly secured. 3. Never disconnect weights unless directed to do so by licensed nurse or doctor and follow their specific instructions. 4. Do not permit the weights to swing, drop, or rest on any surface. 5. Check any area where traction equipment comes in contact with patient's skin for areas of pressure or irritation.		
Objective 8 Discuss principles of cast care. A. Purpose of casts 1. Immobilize body part so a fractured bone will heal	A. Lecture/ Discuss B. Written test C. CNA-MC Module 14, Manual Skill: "Providing Cast Care," p. 14.13-14.14	Correctly demonstrates ability to perform cast care.

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Content Outline Theory Objectives	Suggested Learning Activities/Evaluation	Clinical Activities
2. Relieve pain 3. Allow mobility and limited use of extremity while fracture heals (i.e., isometric exercises, walking casts) to prevent disuse atrophy B. Principles of cast care 1. Open to air until dry. 2. Handle with palms of hands. 3. Keep linens off cast. 4. Turn onto unaffected side. 5. Keep cast dry. 6. No foreign objects placed underneath cast. 7. Protect from soiling during elimination. 8. Keep clean and dry. 9. Elevate with pillow. C. Observations 1. Check skin for irritation. 2. Neurovascular checks. 3. Check for odor or drainage. 4. Check for cracks in the cast. 5. Check for rough edges on cast.		Reports all abnormal signs and symptoms to the licensed nurse.
Objective 9 Identify and explain the purpose of specific orthopedic devices and the role of the nurse assistant. A. Purpose of orthopedic devices 1. Assist the patient to function at maximum level of independence. 2. Provide support and alignment, prevent deformities and improve body function. 3. Prevent damage to joint or body part while healing (after surgery or trauma). 4. Rest inflamed joints while healing. B. Orthopedic devices C. Slings 1. Support weak or paralyzed extremities.	A. Lecture/ Discuss B. Show devices C. Demonstrate skills for • Application of soft goods (slings, immobilizers) • Maintenance of CPM D. Manual skill 12.9 CPM E. Written test	Safely demonstrates the proper handling of orthopedic devices.

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Content Outline Theory Objectives	Suggested Learning Activities/Evaluation	Clinical Activities
2. Prevent paralyzed arm from dropping when patient stands up. 3. Nurse assistant's role a. Review correct method for applying sling before beginning procedure. b. Place on patient before getting patient up out of bed or chair. c. Monitor for proper positioning, circulation and relief of pain. D. Abductor pillow 1. Keeps hips abducted (legs apart) after hip replacement surgery to decrease strain on hip 2. Prevents dislocation of new hip joint. 3. Nurse assistant's role a. Prevent adduction of hip. b. Keep the abductor pillow in place when turning patient. c. Support entire leg when turning patient. d. Reassure patient that the pillow is a protective device. e. Check for pressure areas under straps of pillow. f. Two or three small pillows can be used when patient sitting up in chair. E. Knee Immobilizer 1. Used to immobilize knee after injury or to support knee after surgery 2. Two types: flexible knee joint and immovable knee joint 3. Can be complicated to apply 4. Nurse assistant's role 5. Nurse assistant's role a. Many facilities require and specially trained licensed nurse or therapist to apply knee braces (check with your facility policy and the		

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Content Outline Theory Objectives	Suggested Learning Activities/Evaluation	Clinical Activities
licensed nurse). b. Check skin under knee immobilizer for irritation and skin breakdown; areas may need to be padded by licensed nurse or therapist. c. Patient may feel off-balance when walking with knee immobilizer. Ambulate patient with care and only when instructed to do so by licensed nurse. F. Cervical collars 1. Used to immobilize neck in a person with a suspected cervical spine fracture. 2. Relieve neck muscle spasm following trauma or neck strain. 3. Support the head when degenerative disease affects cervical vertebrae. 4. Stabilize cervical spine following surgery or trauma. 5. After healing of cervical fracture and halo brace removal, cervical collar used to stabilize cervical spine while healing continues. 6. Two types - soft foam collars and two-piece hard plastic (Philadelphia collar). 7. Nurse assistant's role a. Check with licensed nurse when caring for patient in cervical collar (for possible fractured vertebrae or following surgery or trauma, only experienced licensed nurses should care for patient). b. When used for muscle spasm and relief of pain in degenerative disc disease, follow instructions of licensed nurse (facility policies may vary as to responsibility for applying cervical collar). c. Apply collar with head erect and patient facing straight forward. d. Some fasten in back, some in front. Check		

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Content Outline Theory Objectives	Suggested Learning Activities/Evaluation	Clinical Activities
with licensed nurse for proper placement. e. Observe for airway obstruction and swallowing impairment if collar becomes too tight. f. Check with licensed nurse to see if collar may be removed for mealtimes to prevent swallowing difficulties. g. Immobilization may be ineffective if applied too loosely or positioned improperly. h. Observe for pain in jaw and collar bone from pressure of collar, especially hard collars. i. Pad bony prominences to prevent skin breakdown. G. Splints 1. Support joints to relieve inflammation and muscle spasm. 2. Rests inflamed joint by limiting motion. 3. Prevents deformity. 4. Support fractured bone until cast applied or surgery performed. 5. Nurse assistant's role a. Apply splints only when used as supports and only as directed by licensed nurse – nurse assistants should not apply splints to unhealed fractures. b. Review correct method for applying splint and appropriate placement. c. Check pressure areas for adequate padding. d. Ask patient if she/he is experiencing any pain and report complaints of pain to licensed nurse immediately. e. Do neurovascular checks every two hours or per facility policy. H. Braces 1. Support weak or malformed body parts. 2. Prevent or correct deformities and maintain		

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Content Outline Theory Objectives	Suggested Learning Activities/Evaluation	Clinical Activities
alignment. 3. Prevent movement of joint. 4. Protect soft-tissue injuries. 5. Provide protection and healing for minor bone fractures. 6. Nurse assistant's role a. Check with licensed nurse to see if nurse assistant allowed to apply brace (facility policies and patient's condition may vary). b. Always apply brace over skin that is protected by clothing or use brace that has soft, protective lining. c. Observe skin under brace for reddened areas and skin breakdown. d. Report patient's complaints of pain to licensed nurse immediately. e. Observe for proper fit as some braces need to be adjusted after a period of time. f. Offer support and understanding to patient who must wear a brace or splint for an extended period of time, especially if it limits mobility and ADLs and alters body image. I. Continuous Passive Motion (CPM) 1. Passively flexes and extends knee joint after knee or hip surgery. 2. Promotes healing and limits scarring and stiffness in joint. 3. Patient may be out of device for meals, repositioning on side and while sleeping. Check with licensed nurse for doctor's orders. 4. Nurse assistant's role (see Manual Skill – "Caring for Patient in a Continuous Passive Motion Device") a. Position patient flat to remove extremity from CPM or to return extremity to CPM after		

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Content Outline Theory Objectives	Suggested Learning Activities/Evaluation	Clinical Activities
personal care. - Place the CPM on the bed using proper body mechanics and position the patient's foot so it rests against the support plate. - Knee joint should align with the hinge on the leg frame. - Secure leg with straps that come with CPM (usually Velcro®). - Check settings to make sure they match doctor's order. - Turn on machine and observe patient for one full cycle; readjust for optimal comfort. - When leg out of CPM, encourage patient to perform prescribed isometric and active exercises. J. Document amount of time patient tolerated machine.		
Objective 10 State types of joint replacements and related care of patients. - Purpose of joint replacements and precautions - General precautions for all joint surgery - Observe for signs & symptoms of infection. - Use aseptic technique when emptying wound drains. - Accurate I & O - Remind patient of exercises given by physical and occupational therapist. - Hip replacement - Performed to relieve pain and improve stability in conditions such as arthritis, degenerative joint disease, fractures, failure of previous hip surgery, congenital hip disease. - Hip precautions - Keep leg abducted at all times.	- Lecture/ Discuss - Manual skill 12.10, Repositioning After Hip Replacement - Written test - CNA-MC Module 6, objective 6, p. 6.7: Signs/symptoms of infection	Uses appropriate joint replacement precautions when caring for patients.

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Content Outline Theory Objectives	Suggested Learning Activities/Evaluation	Clinical Activities
b. Never allow the hip to flex more than 90°. c. Keep the leg in neutral position, not externally or internally rotated. d. Turn patient to side recommended by surgeon (either operative side or non-operative side – different surgeons have different preferences). e. Patient must be log-rolled and leg supported with pillows to keep the hip in alignment. f. Observe weight-bearing limitations when ambulating patient. g. NWB – non-weight bearing. h. PWB – partial-weight bearing. i. TTWB – toe touch weight-bearing. 4. Knee a. Performed to relieve pain, restore normal movement and correct deformities for conditions such as: arthritis, post-traumatic arthritis, osteoarthritis and hemophilia. 5. Knee precautions a. CPM for flexion of knee (see Manual Skill – “Caring for Patient in a Continuous Passive Motion Device”). b. Weight bearing as ordered. c. Knee brace or immobilizer when up. d. Elevate leg to prevent swelling.		
Objective 11 Explain proper body mechanics when using assistive devices. A. Review guidelines in the use of walkers and canes 1. Nurse assistant's personal body mechanics as related to the care of the orthopedic patient, i.e., log rolling. 2. Principles and purpose of elevation of extremities 3. Nurse assistant's role	A. Lecture/ Discuss B. Return demonstration C. Written test D. CNA-MC Module 5, Manual Skill “Assisting the Resident to Ambulate with Walker/Cane”, pp. 5.18 – 5.19 E. CNA-MC Module 5, objective 3, pp. 5.4-5.5: Lift, turning, moving and positioning in bed	Safely demonstrates use of orthopedic devices utilizing proper body mechanics. Reinforces patient teaching in the use of proper body mechanics when using assistive

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Content Outline Theory Objectives	Suggested Learning Activities/Evaluation	Clinical Activities
a. Reinforce teaching from physical therapist. b. Reinforce patient teaching on the appropriate use of crutches.		devices.
Objective 12 Describe the role of the nurse assistant in providing care to the orthopedic patient. A. Basic observations 1. Color of the toes or fingers 2. Ability to move tips of the extremities 3. Ability of patient to feel you touch affected extremity 4. Note temperature of fingers and toes 5. Check circulation, movement, and sensation every 2 hours 6. Signs of infection 7. Report any differences between extremities or changes to the licensed nurse. B. Care measures 1. Range of motion a. Emphasize importance of ROM as it is often not done. ROM is a skill nurse assistants can perform that will impact the outcome of patient functioning. 2. Pain control (Refer to Module 4, Care of the Surgical Patient) 3. Body alignment 4. Incentive spirometer 5. Turn, cough, deep breathe 6. Prevent complications of immobility (objective 6) C. Observe for signs and symptoms of any complications, (i.e. calf pain, chest pain, or shortness of breath) and report to the licensed nurse.	A. Lecture/ Discuss B. Written test C. CNA-MC Module 14, objective 9, pp. 14.9 and Manual Skill “Range of Motion Exercises”, pp. 14.15 – 14.18	Safely demonstrates care of orthopedic patients. Recognizes abnormal signs and symptoms in orthopedic patients and reports to the licensed nurse.

SAMPLE TEST QUESTIONS

Directions: Circle the best answer

1. A patient has arthritis. Care will include all of the following EXCEPT:
 - a. Measures to prevent contractures
 - b. Range of motion exercises
 - c. High impact aerobic exercises and weight lifting
 - d. Assistance with activities of daily living
2. Mr. Day has a cast because of a fracture. The cast needs to dry. Which statement is FALSE?
 - a. The cast should be covered with blankets to keep the patient warm.
 - b. The patient should be turned frequently to allow the cast to dry evenly.
 - c. The entire length of the cast is elevated with pillows.
 - d. The cast is supported with the palms of your hands when it needs to be lifted.
3. Mrs. Matthews is in traction. You are assisting in her care. You should do all of the following EXCEPT:
 - a. Find out if the traction is continuous or intermittent.
 - b. Keep the weights off the floor.
 - c. Remove the weights if she complains of discomfort.
 - d. Check skin under any traction apparatus.
4. A patient had a hip replacement three days ago. The operated leg should be:
 - a. Abducted at all times
 - b. Adducted at all times
 - c. Externally rotated at all times
 - d. Flexed at all times
5. Compartment syndrome is a
 - a. Serious surgical emergency
 - b. Normal side effect of a fracture
 - c. Chronic condition related to arthritis
 - d. Side effect of medications
6. Position the patient with an amputation
 - a. With the legs in abduction
 - b. With pillows between the legs
 - c. With the head elevated at least 90 degrees
 - d. With the legs in adduction
7. Cervical, in relation to the skeletal system, is
 - a. Between the ribs
 - b. Inflammation of the bones
 - c. Inflammation of the joints
 - d. The neck
8. An arthrodesis is
 - a. A surgical union or fixation of the joint
 - b. A plastic reconstruction of the joint
 - c. The neck
 - d. Removal of cartilage

SAMPLE TEST QUESTIONS - KEY

1. A patient has arthritis. Care will include all of the following EXCEPT:
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 - e. **A surgical union or fixation of the joint**
 - f. A plastic reconstruction of the joint
 - g. The neck
 - h. Removal of cartilage

CONTINUOUS PASSIVE MOTION

EQUIPMENT:

1. Continuous Passive Motion machine
2. Sheepskin pads for the unit

CRITERIA:

Safely cares for the patient in a continuous passive motion (CPM) device

1. Obtain equipment from storage room.
2. Follow introductory procedure (knock, introduce self, wash hands, identify patient explain procedure, provide privacy).
3. Set up equipment on bedside table or at side of bed. (In many facilities, the doctor sets the initial settings.)
4. Licensed nurse will check MD order for length of time patient to be in CPM and explain the purpose, application and use of the CPM to the patient.
5. Licensed nurse will assess the patient's circulation, sensation and movement and need for pain medication prior to application of CPM. Licensed nurse will instruct in techniques for muscle relaxation and pain control.
6. Nurse assistant will position the patient flat or with head slightly elevated.
7. Lower side rail on near side of bed.
8. Place the CPM machine on the bed (use proper body mechanics) and position the patient's foot so it rests against the support plate.
9. Check that the knee joint corresponds to the hinge in the middle portion of the leg frame.
10. Use Velcro straps to secure leg within cradle of the frame.
11. Check settings to assure they match what the physician has ordered.
12. Turn on the machine and observe patient's response to the passive movement.
13. Readjust for optimal comfort, if needed.
14. Do not put covers over CPM unless bed cradle in place or instructed by licensed nurse.
15. Raise side rail and wash hands.
16. When removing leg from the machine, support the joint beneath the knee and ankle and lift the leg.
17. When leg is out of machine encourage the patient to perform isometric and active exercises, as given by licensed nurse, physical therapist or doctor.
18. Record length of time the patient was in the CPM machine and settings to verify they match doctor order.

REPOSITIONING AFTER HIP REPLACEMENT

EQUIPMENT:

1. Abductor pillow
2. Hospital bed
3. Overhead trapeze
4. Draw sheet
5. Extra pillows

CRITERIA:

Turn and reposition a patient one day after hip replacement.

1. Maintain hip precautions.
 - Keep HOB no higher than 45° (avoid hip flexion); patient should avoid bending over
 - Keep surgical extremity outwardly rotated
 - Keep legs apart with an abduction (Charnley) pillow (avoid crossing legs)
2. Maintain body alignment.
3. Observe patient for signs of hip dislocation.