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# Nursing Management of Patients with Musculoskeletal Disorders

**Adult Health Nursing**

Fractures, dislocations, sprains, osteoarthritis, rheumatoid arthritis, osteoporosis, osteomyelitis, spinal disorders, amputations and joint replacement.

**For educational purposes only.**

## CHAPTER 12 / ADULT HEALTH NURSING 12. Nursing Management of Patients with Musculoskeletal Disorders

## 1. Assessment

Assess pain, swelling, deformity, ROM, gait, functional ability and neurovascular status distal to an injury. Six Ps: pain, pallor, pulselessness, paraesthesia, paralysis and poikilothermia. Pain out of proportion or on passive stretch may precede pulse loss in compartment syndrome. X-ray, CT/MRI, inflammatory markers and joint aspiration are used as indicated.

### Fractures

Definition and pathophysiology: Loss of bone continuity; closed/open, displaced/nondisplaced, complete/incomplete, pathological or stress fracture.

Clinical features and investigations: Pain, swelling, deformity, loss of function; X-ray; assess skin and distal neurovascular status.

Management and nursing care: Immobilize, analgesia, reduction and fixation/cast as indicated. Open fracture requires urgent sterile covering, antibiotics/tetanus evaluation and surgery. Monitor compartment syndrome, infection, fat embolism and VTE.

### Dislocations and sprains

Definition and pathophysiology: Dislocation disrupts joint alignment; sprain injures ligaments.

Clinical features and investigations: Pain, swelling, instability/deformity; examination and imaging as indicated.

Management and nursing care: Immobilize in position found, do not force reduction, urgent neurovascular assessment; controlled rehabilitation after treatment. For sprain use protection, appropriate cooling and graded loading.

### Osteoarthritis

Definition and pathophysiology: Degenerative joint disorder with cartilage and subchondral changes.

Clinical features and investigations: Activity-related pain, short morning stiffness, reduced ROM; clinical assessment and X-ray if indicated.

Management and nursing care: Exercise, weight management, joint protection, individualized analgesia and joint replacement when required.

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## Rheumatoid arthritis

Definition and pathophysiology: Autoimmune inflammatory synovitis leading to erosions and systemic manifestations.

Clinical features and investigations: Symmetrical small-joint swelling, prolonged stiffness, fatigue; RF, anti-CCP, inflammatory markers and imaging.

Management and nursing care: Early specialist disease-modifying therapy; balance rest with exercise, monitor infection and adverse effects, promote joint protection.

## Osteoporosis

Definition and pathophysiology: Reduced bone strength and increased fragility fracture risk.

Clinical features and investigations: Often silent until low-trauma fracture; DXA and risk assessment.

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Management and nursing care: Fall prevention, resistance/weight-bearing exercise when appropriate, adequate calcium/vitamin D and prescribed antiresorptive or anabolic therapy. Teach safe administration of medicines.

## Osteomyelitis

Definition and pathophysiology: Bone infection, haematogenous or contiguous after trauma/surgery.

Clinical features and investigations: Localized pain, fever, swelling, chronic draining sinus; cultures, MRI and inflammatory markers.

Management and nursing care: Culture-directed antimicrobial and possible debridement; aseptic wound care, monitor treatment toxicity and adherence.

## Gout

Definition and pathophysiology: Monosodium urate crystal deposition due to hyperuricaemia.

Clinical features and investigations: Acute red, hot, painful joint, often first MTP; synovial crystal analysis when indicated, exclude septic arthritis.

Management and nursing care: Prescribed anti-inflammatory treatment for flare; long-term urate-lowering therapy when indicated, lifestyle education. Fever with hot joint needs urgent assessment.

## Spinal disorders

Definition and pathophysiology: Degeneration, disc herniation, stenosis or other structural disease.

Clinical features and investigations: Back pain, radiculopathy, weakness; neurological exam, imaging for indications.

Management and nursing care: Analgesia, physical therapy and surgery in selected cases. New bladder/bowel dysfunction, saddle anaesthesia or progressive weakness may indicate cauda equina syndrome.

## Amputation and joint replacement

Definition and pathophysiology: Surgical removal of limb or replacement of a damaged joint.

Clinical features and investigations: Postoperative pain, wound/drain findings, mobility changes; phantom pain may occur.

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Management and nursing care: Monitor bleeding, infection, VTE, pain and circulation; positioning to avoid contracture, stump/skin care, physiotherapy and prosthetic fitting. Joint precautions depend on procedure.

## 2. Nursing responsibilities

Check cast edges, swelling, capillary refill, sensation and movement; avoid inserting objects under cast. Support safe transfers and prescribed weight-bearing. Explain exercises and analgesia before rehabilitation. Escalate acute neurovascular compromise immediately.

## 3. Important Examination Questions

### Long Answer Questions

1. 1. Describe fracture management and nursing care
2. 2. compare OA and RA.

### Short Answer Questions

1. 1. Explain six Ps
2. 2. list complications of immobility

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1. 3. discuss osteoporosis and amputation care.

### Very Short Answer Questions (with answers)

1. 1. What is haemarthrosis? - Bleeding into a joint.
2. 2. Which test measures bone density? - DXA.

## 4. Quick Revision

- Pain out of proportion may indicate compartment syndrome.
- Avoid forced reduction.
- Rehabilitation starts with safe individualized mobility.

## 5. Conclusion

Pain out of proportion may indicate compartment syndrome. Avoid forced reduction. Rehabilitation starts with safe individualized mobility.

## Practice questions

Choose one best answer. The answer key and explanations follow the questions.

**1. Which finding may precede pulse loss in compartment syndrome?**

A. Painless increase in joint mobility
B. Pain out of proportion or on passive stretch
C. Improved sensation with worsening swelling
D. A normal gait despite the injury

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**2. Which pattern is characteristic of rheumatoid arthritis?**

A. Activity-related pain with only short morning stiffness

B. Sudden first-MTP pain from urate crystals

C. Symmetrical small-joint swelling with prolonged stiffness

D. Silent bone loss until a fragility fracture

**3. Which test measures bone density when assessing osteoporosis?**

A. Plain skeletal radiography

B. Radionuclide bone scanning

C. Routine spine MRI

D. DXA

**4. A patient with a new limb cast reports escalating pain and pain on passive movement of the fingers. What should the nurse do?**

A. Dismiss the pain because a cast should feel tight

B. Apply additional constricting bandages

C. Urgently assess and escalate possible compartment syndrome

D. Wait for loss of a pulse before seeking review

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## Answer key and explanations

**1. B - Pain out of proportion or on passive stretch**

Severe disproportionate pain or pain on passive stretch may appear before pulse loss.

**2. C - Symmetrical small-joint swelling with prolonged stiffness**

Rheumatoid arthritis commonly produces symmetrical inflammatory small-joint disease and prolonged stiffness.

**3. D - DXA**

DXA assesses bone density in osteoporosis evaluation.

**4. C - Urgently assess and escalate possible compartment syndrome**

Pain out of proportion and pain with passive stretch are concerning early findings. Urgent assessment is needed; a palpable pulse does not exclude compartment syndrome.

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