

Introduction to Orthopaedic Treatment

Introduction to Orthopaedic Treatment Modalities

Designed as concise, easy-to-read study notes

1. Overview

Aspect	Key Points
Goal of orthopaedic treatment	Restore function, relieve pain, correct deformity, and prevent further damage to the musculoskeletal system.
Treatment spectrum	Ranges from non-invasive (education, activity modification) to highly invasive (joint replacement).
Decision-making	Based on patient factors (age, comorbidities, activity level), pathology, severity, and expected outcomes.

2. Classification of Modalities

Category	Typical Interventions	Indications
Conservative / Non-operative	• Patient education & lifestyle counseling • Physical therapy & therapeutic exercise • Pharmacologic analgesia (NSAIDs, acetaminophen, opioids) • Orthoses, braces, splints • Activity modification & weight management	Early-stage disease, mild-to-moderate symptoms, patients unfit for surgery.
Minimally Invasive	• Image-guided injections (corticosteroid, hyaluronic acid, PRP) • Needle-based procedures (corticosteroid, platelet-rich plasma, stem-cell injections) • Radiofrequency ablation • Arthroscopy (diagnostic & therapeutic)	Persistent pain despite conservative care, localized pathology, desire to avoid open surgery.

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Category	Typical Interventions	Indications
Modalities		
Surgical – Joint Preserving	• Open or arthroscopic joint arthroplasty • Osteotomy (realignment) • Ligament reconstruction (e.g., ACL) • Tendon repair or reconstruction • Cartilage restoration (microfracture, autologous chondrocyte implantation)	Young/active patients, focal defects, instability, early osteoarthritis.
Surgical – Joint Replacing	• Total/partial joint arthroplasty (hip, knee, shoulder, elbow) • Reverse shoulder arthroplasty • Hemiarthroplasty • Custom or 3D printed implants	End-stage arthritis, severe deformity, failed joint-preserving procedures.
Adjunctive / Rehabilitation	• Post-operative physiotherapy • Occupational therapy • Pain management programs (multimodal analgesia, nerve blocks) • Nutritional optimization	All phases of care to maximize functional recovery.

3. Conservative (Non-operative) Modalities

3.1 Patient Education & Lifestyle

- **Key topics:** anatomy basics, disease process, realistic expectations, activity pacing.
- **Tools:** pamphlets, videos, digital apps, shared decision-making worksheets.

3.2 Physical Therapy (PT)

Component	Typical Exercises/Techniques
Range of Motion (ROM)	Passive/active stretching, joint mobilizations.
Strengthening	Isometric ? isotonic ? functional progression (e.g., closed-chain squats).
Neuromuscular Control	Proprioceptive drills, balance boards, gait training.

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Component

Typical Exercises/Techniques

Modalities

Ice/heat, TENS, Ultrasound (when indicated).

Modalities

3.3 Pharmacologic Analgesia

Drug Class	Common Agents	Typical Dose & Frequency	Main Considerations
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