

## Joint Pain Assessment and Management

Joint pain can arise from many different causes, including injury, arthritis, infections, and other medical conditions (see chart below). Some causes are self-limiting, while others can be highly disabling and even life-threatening. Arthritis is a leading cause of activity limitations and chronic pain, especially in older adults. Diagnosing and treating joint pain involves a systematic approach. Each step should be tailored to the individual patient's presentation and history.

Common Causes of Joint Pain	
Arthritis	Osteoarthritis, rheumatoid arthritis, gout, pseudogout
Infectious Arthritis	Septic arthritis, Lyme disease
Autoimmune Conditions	Lupus, ankylosing spondylitis
Injury or Trauma	Sprains, strains, fractures, ligament tears, post-traumatic arthritis
Other conditions	Tendonitis, bursitis, fibromyalgia

### Diagnosis

- **Patient History**
  - **Symptom Description:** Ask the patient to describe the pain (location, duration, intensity, and nature—sharp, dull, etc.), as well as aggravating and alleviating factors. Key constitutional symptoms, including fever, chills, weight loss, and night sweats, suggest a systemic process such as autoimmune disease or severe infection.
  - **Medical History:** Ask the patient about previous injuries, surgeries, arthritis, family history of joint diseases, and other medical conditions.
  - **Lifestyle Factors:** Assess daily activities, occupations, and levels of physical activity. Describe functional limitations, such as inability to work due to pain or mobility impairment.
- **Physical Examination**
  - **Range of Motion:** Assess the movement of the affected joint(s).
  - **Swelling, Redness, or Warmth:** Evaluate for signs of inflammation or infection.
  - **Tenderness and Deformity:** Note the presence of tenderness, deformities, or abnormalities of the affected joint (s).
  - **Joint stability:** Test for stability and signs of ligamentous injury.
- **Diagnostic Tests**
  - **Imaging Studies:** X-ray, magnetic resonance imaging (MRI), or computed tomography (CT) scans can reveal structural issues, such as fractures, arthritis, or ligament injury.
  - **Laboratory Tests:** Blood tests (e.g., rheumatoid factor, uric acid, or inflammatory markers) can help diagnose conditions like rheumatoid arthritis or gout.
  - **Joint Aspiration:** In some cases, fluid may be extracted from the joint for analysis and culture, which can reveal infections, crystals, or other abnormalities.

### Treatment

- **Non-Pharmacological Treatments**
  - **Rest and Activity Modification:** Avoiding activities that exacerbate pain can help reduce symptoms. Alternate activity with rest and take short rest breaks throughout the day.

- **Exercise and Physical Therapy:** Resistance, aquatic, and strength training exercises can strengthen surrounding muscles and improve joint function.
- **Occupational Therapy (OT):** OT can help people with arthritis learn how to manage everyday tasks by adapting to the home or work environment and by providing splints and assistive devices.
- **Heat and Cold Therapy:** Applying heat or cold packs can relieve pain and reduce inflammation.
- **Weight Management:** For weight-bearing joints, maintaining a healthy weight can lessen stress on the joints.
- **Medications**
  - **Over-the-Counter Pain Relievers:**
    - Non-steroidal anti-inflammatory drugs (NSAIDs) (e.g., ibuprofen, naproxen) and/or acetaminophen.
    - Topical anti-inflammatory creams or patches such as lidoderm, capsaicin or voltarin
    - Cannabidiol (CBD) oil
  - **Prescription Medications:** Depending on the diagnosis, stronger medications may be prescribed, such as corticosteroids or disease-modifying antirheumatic drugs (DMARDs) for inflammatory conditions. Opioids can be considered in certain circumstances, such as severe acute pain following injury or surgery, or when other treatments have failed.
- **Invasive Treatments**
  - **Injections:**
    - Corticosteroid injections into the joint can provide temporary relief from inflammation and pain.
    - Hyaluronic acid injections may also be used for osteoarthritis.
  - **Surgery:** In severe cases where conservative treatments fail or are likely to fail, surgical options may be considered:
    - arthroscopy
    - joint replacement
    - arthrodesis
    - repair of damaged structures such as anterior cruciate ligament (ACL)
- **Alternative Therapies**
  - **Acupuncture:** Some patients find relief through acupuncture or other complementary therapies.
  - **Supplements:** Certain supplements, like glucosamine and chondroitin, may help with joint health, although evidence varies.

## Patient Education

- **Joint protection techniques:**
  - **Use Larger Joints:** Whenever possible, use larger joints or muscle groups to perform tasks. For example, use your legs to lift objects rather than your back or arms.
  - **Avoid Excessive Repetition:** Limit repetitive movements that stress the same joint. Vary your activities to prevent overuse injuries.
  - **Maintain Good Posture:** Ensure that your posture is correct when sitting, standing, or lifting. This reduces undue stress on joints.

- **Use Ergonomic Tools:** Employ tools designed to minimize joint strain, such as ergonomic keyboards, chairs with proper lumbar support, or specialized kitchen utensils.
- **Use Assistive Devices:** Utilize devices like canes and walkers to provide gait stability and lessen discomfort. Use splints or braces to support and protect joints during daily activities.
- **Modify Activities:** Adapt activities to minimize joint strain. For example, use a reacher to grab items from high shelves instead of stretching or climbing.
- **Plan and Prioritize:** Break tasks into smaller, manageable steps and prioritize essential activities. Allow for rest periods between tasks.
- **Use Resting Positions:** When possible, perform tasks in a seated position to reduce the load on weight-bearing joints.
- **Supportive footwear:** Use proper footwear to provide adequate support and cushioning for the feet and knees.
- **Gentle Stretching:** Engage in regular stretching exercises to maintain flexibility and range of motion.
- **Strength Training:** Strengthen the muscles around the joints to provide better support and reduce strain on the joints.
- **Pain Management**
  - **Non-pharmacologic treatments:** In addition to above measures, emphasize the importance of exercise and weight loss in preserving joint function and quality of life. Bracing, elevation, and heat or cold therapy can help provide pain relief.
  - **Anti-inflammatory medication:** Provide information about proper use of over-the-counter medications such as ibuprofen and acetaminophen. Reinforce instructions to take NSAIDS with food.
- **Disease progression and safety:** Educate patient on when to seek immediate medical attention, such as severe pain, significant swelling, or systemic symptoms, especially fever.
- **Support Groups:** Encourage patients to engage in support groups to share experiences and learn from others with similar conditions.

## Conclusion

The diagnosis and treatment of joint pain involve a comprehensive approach that includes a detailed history, physical examination, and appropriate tests. Treatment plans are tailored to the underlying cause and may incorporate lifestyle changes, medications, an exercise program, physical therapy, and in some cases, surgical interventions. Early diagnosis and management are key to preventing further joint damage and improving quality of life.

## References

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