

# Canine Osteoarthritis (OA)

## An Informative Guide

### What Is Osteoarthritis?

**Osteoarthritis (OA)**, also called **degenerative joint disease (DJD)**, is a **chronic, progressive, and irreversible condition** characterised by:

- **Cartilage degradation**
- **Synovial inflammation**
- **Subchondral bone sclerosis**
- **Osteophyte formation**

OA leads to **joint pain, stiffness, and reduced mobility**, and is one of the most common causes of chronic pain in dogs.

### Pathophysiology

1. **Cartilage breakdown** disrupts the smooth, frictionless surface of the joint
2. Inflammatory mediators (e.g., prostaglandins, cytokines) worsen tissue damage
3. **Synovitis, joint capsule thickening, and effusion** develop
4. **Subchondral bone remodelling and osteophytes** (bone spurs) form
5. **Result:** chronic pain, reduced joint function, and muscular atrophy

OA may arise **secondary to developmental disorders** (hip/elbow dysplasia, cruciate disease) or **post-trauma** but can also be **primary (age-related)** in older dogs.

### Clinical Signs of OA

- Stiffness after rest ("start-up lameness")
- Limping or lameness (especially after activity)
- Reluctance to run, jump, or use stairs
- Muscle atrophy around affected joint
- Behavioural changes (irritability, withdrawn behaviour)
- Difficulty rising or lying down
- Decreased exercise tolerance

**Common joints affected:** hips, stifles, elbows, shoulders, carpi, hocks, and lumbosacral spine

### Diagnosis

- Clinical history and orthopaedic exam
- Joint manipulation and range of motion testing
- Radiography (osteophytes, sclerosis, joint space narrowing)
- Advanced imaging (CT/MRI) if needed
- Synovial fluid analysis (to rule out inflammatory arthropathies)

### Veterinary Management

**Multimodal treatment is essential** for long-term control.

1. **Pharmacologic:**

- NSAIDs (e.g., meloxicam, carprofen)
- Gabapentin, amantadine, or tramadol (neuropathic/adjunctive pain relief)
- Injectable disease-modifying agents (e.g., pentosan polysulphate)
- Intra-articular therapies (e.g., corticosteroids, hyaluronic acid, PRP)

## 2. Nutraceuticals:

- Glucosamine/chondroitin sulphate
- Omega-3 fatty acids (EPA/DHA)
- Green-lipped mussel extracts

## 3. Weight management:

- Most critical modifiable factor for OA progression and symptom control

## 4. Surgical (in advanced or non-responsive cases):

- Total joint replacement (e.g., hip, elbow)
- Arthrodesis
- Joint excision (e.g., femoral head and neck ostectomy)

## Role of the Veterinary Physiotherapist

Rehabilitation is essential for **pain management**, **mobility preservation**, and **quality of life enhancement**.

## Rehabilitation Goals

Phase	Timeframe	Focus
Acute flare	Days–2 weeks	Pain/inflammation control, maintain ROM
Subacute	2–6 weeks	Controlled movement, light strengthening
Long-term	Ongoing	Strength, joint protection, lifestyle adaptation

## Core Physiotherapy Interventions

- **Manual therapy:**
  - Soft tissue release, joint mobilizations
- **Therapeutic exercises:**
  - Sit-to-stand, weight shifts, hill walks, low-impact routines
- **Hydrotherapy:**
  - Buoyancy-assisted mobility and endurance
- **Laser therapy / PEMF:**
  - Reduces inflammation and supports tissue repair
- **Cryotherapy / Thermotherapy:**
  - For acute pain and stiffness respectively
- **Proprioceptive and balance training:**
  - Wobble boards, balance cushions, coordination tasks

## Key Physiotherapy Objectives

- **Relieve pain** and reduce reliance on medications
- **Maintain and improve range of motion (ROM)**
- **Preserve muscle mass** and joint stability
- **Enhance proprioception** and coordination
- Support **weight management** via tailored activity plans
- **Empower owners** with home exercise programs and environmental adaptation

**Osteoarthritis cannot be cured, but with early detection and comprehensive care, affected dogs can live active, comfortable lives.**