

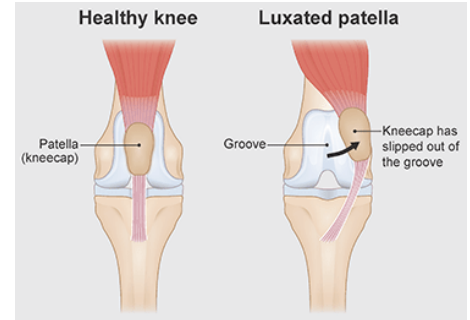
Canine Patellar Luxation: An Informative Guide

What Is Patellar Luxation?

Patellar luxation is a condition where the **patella (kneecap)** deviates out of its normal position within the **femoral trochlear groove**, usually **medially** or **laterally**.

It is a **developmental orthopedic disorder** that can lead to **lameness, discomfort, and joint degeneration**.

The patella is embedded in the quadriceps tendon and acts as a fulcrum to improve knee extension.



Types of Luxation

Type	Description
Medial	Most common (especially in small/toy breeds)
Lateral	More common in large breeds and advanced cases
Bilateral	Common; may be asymmetrical

Pathophysiology & Causes

Patellar luxation usually results from conformational abnormalities, such as:

- Femoral/tibial torsion
- Shallow trochlear groove
- Malalignment of the quadriceps mechanism
- Medial displacement of the tibial tuberosity

These structural changes create imbalanced forces that pull the patella out of its groove during movement.

Grading System (Orthopaedic Assessment)

Grade	Description
I	Patella can be manually luxated, returns spontaneously
II	Luxates with flexion, self-reducing or manually reduced
III	Patella is luxated most of the time but can be reduced manually
IV	Patella is permanently luxated and cannot be reduced

Clinical Signs

- Intermittent "skipping" lameness
- Hindlimb carried for a few steps then returned to normal
- Crouched posture or bowlegged stance
- Pain or reluctance to jump/run
- Muscle atrophy (chronic cases)
- Audible or palpable click at the stifle

Diagnosis

- Orthopaedic exam: palpation of patella during flexion/extension
- Gait observation
- Radiographs (to assess alignment, trochlear depth, arthritis)
- CT scan or MRI (complex cases or surgical planning)

Treatment Options

Non-surgical (Grades I–II):

- Physiotherapy
- Weight management
- NSAIDs for flare-ups
- Activity modification
- Joint supplements

Surgical (Grades II–IV or painful Grade I):

- Trochleoplasty: deepens the femoral groove
- Tibial tuberosity transposition (TTT): realigns patellar tendon
- Soft tissue balancing imbrication/release of joint capsule
- Femoral/tibial osteotomy (in severe angular deformities)

Role of the Veterinary Physiotherapist

Physiotherapy is essential for:

- Pre-surgical joint conditioning
- Post-operative recovery
- Non-surgical management of mild cases

Rehabilitation Goals

Phase	Timeline	Focus
Acute	0–2 weeks	Pain control, passive ROM, tissue healing
Subacute	2–6 weeks	Gait retraining, controlled strengthening
Late	6–12+ weeks	Proprioception, balance, return to activity

Core Physiotherapy Interventions

- **Cryotherapy** and **laser therapy** (post-op inflammation)
- **Passive ROM** and joint mobilizations
- **Isometric exercises** (quad sets, static stand)
- **Sit-to-stand**, weight shifting
- **Proprioceptive retraining**: balance discs, paw targeting
- **Hydrotherapy**: low impact strengthening with buoyancy
- **Neuromuscular electrical stimulation (NMES)** (if muscle atrophy present)
- **Client education** on weight control, home setup, stairs/ramp use

Key Physiotherapy Objectives

- Restore **quadriceps strength**
- Re-establish **patellar tracking**
- Improve **limb loading symmetry**
- Prevent **recurrence or compensatory strain**
- Support **joint longevity and comfort**

With appropriate care, most dogs with patellar luxation can return to full, comfortable activity—especially when physiotherapy is integrated into their care plan.