



CHRONIC PAIN PREVALENCE AND CONDITIONS THAT CAUSE CHRONIC PAIN

Prevalence

The prevalence of chronic pain is unknown in cats. However, the [2021 AAFP Feline Senior Care Guidelines](#) highlight that cats are now living longer, and the prevalence of chronic pain as well as comorbidities have increased often with a negative impact on the individuals' quality of life (QOL) and the cat-caregiver bond. For example, the prevalence of radiographic degenerative joint disease (DJD) has been reported to be 92% in cats between 6 months and 20 years of age. Radiographic evidence of appendicular and spinal joint disease appears to increase with age. Osteoarthritis (OA) and DJD are defined below.

Examples of Chronic Pain Conditions

Listed here are conditions that commonly cause chronic or sustained pain, tissue/nerve damage, inflammation, and persistent noxious input leading to central sensitization. The impact on the cat's health, behavior, and welfare should be identified and communicated to the cat caregiver.

Degenerative Joint Disease

- DJD is an 'umbrella term,' encompassing degeneration of synovial joints (OA) and non-synovial joints, such as spondylosis deformans. The terms OA and DJD are often used interchangeably in the literature, despite the fact they mean different things. The term DJD will be used here as clinically, cats present with both synovial and non-synovial joints that are diseased and painful.
- DJD can be associated with pain—current estimates indicate that 60% of all cats have >1 site (appendicular joint or spinal segment) with painful DJD and 46% of all cats have >2 sites with painful DJD.
- DJD-associated pain leads to structural damage, functional impairment, decreased activity, mobility, and QOL.
- The pathophysiology of DJD is poorly understood in cats but appears to involve several factors to varying degrees, such as genetic, inflammatory, metabolic, and biomechanical changes.
- Unlike in dogs where most OA is driven by developmental disease, the etiology of OA/DJD in cats is not well understood and so DJD in cats is often referred to as idiopathic. The disease is often bilateral and involves multiple joints.



- Aging, obesity, sedentary lifestyle, and metabolic disease are among the risk factors for joint disease in people and similar risk factors are likely important in cats.
- Commonly affected joints include the elbow, hip, stifle, tarsus, and in the axial skeleton, the lumbar and lumbosacral regions.

There is a poor association between radiographic findings and presence and/or severity of clinical pain. The presence of radiographic changes cannot be used to estimate pain; conversely, the absence of radiographic findings does not rule out joint pain. Therefore, radiographs should not be used to dictate therapy, but should be evaluated in light of the patient history, evidence of changes in mobility (through validated questionnaires and videos), and physical examination findings.

For additional insights on DJD and OA pain, explore the videos presented by Dr. Duncan Lascelles below (scroll halfway down the page to access):



- Keys to a Successful OA Exam
- Assessment of the Cat Prior to the Exam
- Approach to Starting the Evaluation of Joints
- Evaluations of the Major Joints

[ACCESS VIDEOS](#)



Cancer

- Complex mechanisms are involved in cancer-induced pain.
- Evidence in humans suggests that pain may be present during all stages of cancer.
- Pain intensity is variable according to the type, size, location, and aggressive nature of cancer. This is particularly true with cancer involving mixed inflammatory and neuropathic pain with tissue infiltration and organ dysfunction.
- Pain can be associated with the primary or metastatic tumor (e.g., feline injection-associated sarcoma; oral squamous cell carcinoma) or therapy for their treatment (e.g., amputation, chemotherapy-induced neuropathy, radiation-induced skin toxicity).
- Pain is exacerbated in the presence of comorbidities.
- Evidence is emerging that the presence of pain may contribute to the progression of cancer locally and to distant metastasis.

Chronic Eye Conditions

- Can be caused by trauma, infection, neoplasms, and auto-immune disease or other diseases (e.g., entropion, uveitis, corneal ulcer, glaucoma).
- Ocular pain may be related to inflammation or increases in (intraocular) pressure.

Chronic Otitis

- A multifactorial condition that can be related to infection, inflammation, allergic skin disease, immune-mediated diseases, or obstructive diseases.
- Normally challenging to manage and may require total ear canal ablation and bulla osteotomy.
- Clinical signs include pain on palpation, head shaking, scratching or pawing at the ears, excessive ceruminous debris, the development of aural hematomas, and foul odor.



Chronic Skin Conditions

- Any chronic skin condition is potentially painful, including chronic wounds caused from burns, post-surgical complications, infection, or auto-immune disease.
- Pain is caused by chronic inflammation, stretching/pulling of the skin as wounds heal, and scarring.
- Feline Herpes Virus (FHV)-1 dermatoses are associated with vesicular, crusting, ulcerative, and necrotizing dermatitis affecting the face.
- Atopic dermatitis can cause excoriations and pruritus.



Diabetic Neuropathy

- This syndrome is described as a complication of chronic diabetes mellitus involving plantigrade stance, reduced patellar reflexes, pelvic limb weakness, and neuropathic pain. In people, numbness and tingling, allodynia, and lethargy are reported.
- There is a lack of literature on this subject in cats, but it may also involve somatosensory and behavioral changes such as aversion to touching of the pelvic limbs, excessive licking of distal limbs, and impaired ability to jump.

Hyperesthesia Syndromes

- A condition without a clear etiology and that little is known about.
- A plethora of factors may play a role in the pathogenesis including hypersensitivity dermatitis, focal epileptic seizures, neuropathic itch or pain, and behavioral changes.
- Pain assessment is difficult as the diagnosis must exclude other conditions such as flea infestation, dermatitis, food allergy, compulsive disorder, spinal disease, and other behavioral issues.
- Clinical presentation usually involves abnormal somatosensory changes (i.e., neuropathic pain), tail chasing, excessive grooming, skin rippling over the lumbar area, pain on palpation, and areas of self-induced alopecia.



Persistent Post-surgical Pain (PPP)

- This is defined as development of chronic pain after surgery with duration of more than two to three months in humans, but the reality is that the pain can last for years or for the rest of the patient's life. The onset of PPP can occur within days, months, or years after surgery in humans, and the same is presumed for cats.
- There are usually clinical signs of central sensitization (i.e., allodynia and hyperalgesia) thought to be caused in part by nerve damage and sustained tissue damage during surgery (e.g., onychectomy, tail or limb amputation, thoracotomy, mastectomy).
- Severity of acute postoperative pain, poor peri-operative analgesic practices, anxiety, and pain catastrophizing have been described as risk factors for the development of PPP in humans, and the first two risk factors and anxiety are considered to apply in cats. Currently, pain catastrophizing has not been defined in cats (or dogs).
- Clinical signs of PPP can be observed in cats having undergone onychectomy and include lameness, back pain, house-soiling, licking and chewing at the digits, aversion to the feet being touched, and altered weightbearing (see figure).
- A common cause of PPP is amputation:
 - Amputation may be indicated in cases of trauma, avulsion, non-healing fractures, and/or cancer involving limbs, digits, or the tail
 - Amputation surgery itself is invasive involving tissue damage, nerve resection, and severe inflammatory input with potential advent of persistent postsurgical and/or chronic neuropathic pain



Feline Idiopathic Cystitis (FIC)

- Characterized by a combination of long-term inflammatory and functional pain related to stressors; thus, factors related to stress for example, not meeting feline essential needs, intercat tension, and lifestyle can influence the development of FIC.
- Clinical signs are nonspecific and include dysuria, straining, pollakiuria, periuria, overgrooming around the perineum, ventral abdominal barbering over the bladder, and behavioral changes.



Oral Painful Conditions

- Chronic Gingivostomatitis
 - Affects a large percentage of cats and involves severe and persistent oral inflammation
 - Involves inflammation of the mucogingival junction, buccal and caudal oral mucosa, and periodontal tissues induce erosive, friable, and diffuse lesions, as well as hemorrhage
 - Cats present with reduced grooming, dysphagia, weight loss over time, and repulsive behavior in response to protective emotions
 - A major component of currently recommended treatment involves full- (or partial-) mouth extractions which is another source of severe acute or chronic pain, which often leads to central sensitization.
- Periodontal Disease
 - It is recognized as one of the most prevalent diseases in feline practice, which may induce chronic oral pain and inflammation, changes in behavior, decreased food intake, weight loss, and spontaneous hemorrhage
 - Treatment requires thorough assessment under general anesthesia including full-mouth dental radiography, surgical dental extractions, and aggressive pain management
- Tooth Resorption
 - Tooth resorption is a gradual and progressive breakdown of the tooth structure, which can be associated with chronic pain (e.g., during exposure of the pulp cavity)
 - The prevalence of tooth resorption ranges from 25–75% of cats
 - Often cats will not exhibit pain behaviors until extensive disease is present, underlining the need for regular oral examination
 - Treatment requires surgical extraction of the affected tooth (teeth) accompanied by pre- and post-treatment dental radiographs





- Orofacial Pain Syndrome
 - Similar to trigeminal neuralgia in people, this condition involves acute episodes of pain-induced behaviors that could be triggered by stress
 - Clinical signs appear to be related to mouth movement during eating or grooming and occur spontaneously with pawing at the mouth, exaggerated licking, and chewing. Cat caregivers describe spontaneous vocalization with repelling behavior (i.e., swatting, scratching, biting) and decreased appetite
- Other common causes of oral pain include trauma, pulpitis, neoplasia, abscesses, dental fractures, and invasive surgical procedures (e.g., maxillectomies, mandibulectomies).

