NUTRITIONAL MANAGEMENT OF PAIN

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INTRODUCTION
Feline Idiopathic Cystitis (FIC) and degenerative joint disease (DJD) are known to cause pain and discomfort in cats.\(^1\)\(^,\)\(^2\) Feline lower urinary tract disease (FLUTD) is a collective term for cats showing signs of pollakiuria, dysuria, haematuria, periuria and/or stranguria. In around 60% of cases, no underlying cause can be found.\(^3\) This form of FLUTD is called FIC, and there is evidence that stress plays an important role in its pathogenesis.\(^1\),\(^4\)

DJD is the most common appendicular joint disease in cats and involves the degradation of cartilage over time, leading to increased joint friction and decreased mobility.\(^5\) Owner-assessed behaviours should be the primary tool for diagnosing DJD in cats. Common behaviours supporting DJD include unwillingness to jump, reducing height of jumps, stiff gait, decreased mobility and grooming, and increased inappropriate elimination. Painful joints on physical examination can help reaffirm diagnosis, as well as radiography.\(^2\) Studies performed by Hill’s Pet Nutrition have shown that nutritional management can help decrease clinical signs and increase quality of life in cats with FIC or DJD.\(^6\),\(^7\),\(^8\)

CLINICAL EVIDENCE FOR NUTRITIONAL MANAGEMENT OF FIC & STRESS IN CATS\(^6\)
Oral supplementation with the essential amino acid L-tryptophan (LT) and milk protein hydrolysate (MPH) have been reported to have positive effects on alleviating anxiety and stress related behaviours in cats.\(^9\),\(^10\) Therefore, it was hypothesised that these ingredients may also aid in the management of cats with FIC.

Figure 1. Emotional Scores and Quality of Life in 10 cats with FIC fed Hill’s™ Prescription Diet™ c/d Urinary Stress

All data are shown as mean ± SEM. *denotes significant difference (p<0.05) vs. week 0. Emotional scores are on a 6-point ordinal scale (0 – high anxiety levels to 5 – low anxiety levels). Quality of Life is rated on a 5-point ordinal scale (1 - very poor to 5 - excellent). The cat emotional score system is adapted from Beata.\(^10\)
thorough history was taken related to the diet and environmental enrichment of the cat. After enrolment, the cats were transitioned to Hill’s™ Prescription Diet™ c/d™ Urinary Stress (dry and/or wet) at home. Advice was given as to how to improve the environment following a protocol described by Buffington et al.(4) Cat emotional scores, quality of life, and FLUTD scores were recorded at enrolment, during telephone interviews by the practice at 2 and 6 weeks, and during clinic visits at 4 and 8 weeks. Taste perception of the new food was also recorded during repeat visits. The same scoring system and frequency of interviewing were used as in the Beata study. (10)

Taste perception of both the dry and wet formulas was rated as excellent throughout the study. Emotional scores and quality of life, as perceived by the owner, improved significantly on the new food (Figure 1). FLUTD signs also improved significantly (Figure 2). The improvements in cats’ emotional scores are in line with those reported by Beata in cats administered MPH and by Pereira in cats on LT oral supplementation. (9,10)

The results of this study provide provisional evidence that a urinary food supplemented with MPH and LT significantly reduces signs of FLUTD and improves emotional scores and quality of life in cats with FIC. Since stress is believed to play an important role in the pathogenesis of FIC, managing both stress and FLUTD may act synergistically.

**Figure 2.** FLUTD scores in 10 cats with FIC fed Hill’s™ Prescription Diet™ c/d Urinary Stress

Data are shown as mean ± SEM. * denotes significant difference (p<0.05) vs. week 0. All scores are on a 6-point ordinal scale (0 – no presence to 5 – severe presence).

**CLINICAL EVIDENCE FOR NUTRITIONAL MANAGEMENT OF DJD IN CATS**

**STUDY I**

Hill’s performed a 12-week randomised, double-blinded, controlled clinical trial involving 172 client-owned adult cats with clinical signs and radiographic changes consistent with DJD. The objective of this study was to determine the efficacy of a joint food (Hill’s™ Prescription Diet™ j/d™) in managing clinical signs of DJD in cats. The joint food contained enhanced levels of docosahexaenoic acid (DHA), methionine, and manganese, as well as an optimised fatty acid ratio of omega-6: omega-3 as compared to the control food.

Cats were assigned to receive either the joint food or a control food and were evaluated at 0, 4, 8, and 12 weeks of feeding. Subjective measurements (veterinary orthopaedic evaluations and pet owner observations of visible signs of arthritis) and objective measurements were used to evaluate efficacy. Based on the veterinarians’ evaluation of the cats presenting with moderate or severe DJD, a significantly higher proportion fed the joint food (61%) showed improved arthritic conditions within 4 weeks compared to the control food (37%). Owners of the cats eating the joint food reported significantly greater improvements in severity of pain, quality of life, and daytime sleep patterns in the moderate to severe DJD group compared to cats with mild DJD. Results of this study provide support for nutritional management of moderate to severe DJD given that these cats responded positively and more rapidly to the joint food compared to a positive control food.

**STUDY II**

Another Hill’s study evaluated the effectiveness of a joint food (Hill’s™ Prescription Diet™ j/d™) in the management of cats with historical, clinical, and radiographic signs of appendicular DJD. This was a 30-day prospective, open-label clinical trial involving 47 adult cats from 21 veterinary clinics in Europe. At the...
beginning of the study, cats underwent a veterinary examination that included scoring the severity of overall arthritic changes on a scale of 1–5 for the presence of lameness, joint swelling, reduction in joint movement, and pain on joint manipulation. Owners were also asked to score on a scale of 1–5 seven aspects of their cat’s mobility, including the cat’s willingness and ability to jump, presence of stiffness or pain, the amount of time spent playing and interacting, grooming behaviour, and overall activity levels. The clinical evaluation and questionnaires were repeated after the cats were eating the joint food exclusively for 30 days. There were significant improvements seen in all of the parameters evaluated. The most marked and frequent changes seen were an improved ability to jump, reduced stiffness, increased activity, reduced lameness, and reduced pain on joint manipulation. The results of this study suggest that feeding a food designed for joint care may have a significant impact on the clinical signs associated with DJD.

References