

Digest

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FELINE IDIOPATHIC
CYSTITIS

The Key Role of Stress in
Feline Idiopathic Cystitis

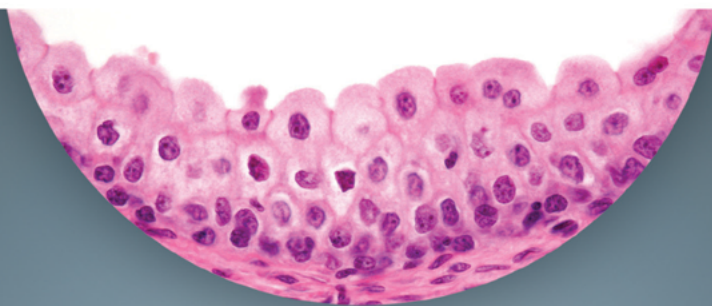
Mary F. Thompson
BVSc(Hons), PhD, DACVIM,
MANZCVS, FHEA

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for Managing Feline
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Camille Torres-Henderson
DVM, DACVIM (Nutrition), DABVP
(Canine/Feline)

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Mikel Maria Delgado
PhD, CAAB, CCBC



The key role of stress in feline idiopathic cystitis

Mary F. Thompson, BVSc(Hons), PhD, DACVIM, MANZCVS, FHEA
The University of Sydney, Sydney, Australia

Feline idiopathic cystitis (FIC) is a disorder of cats that present primarily with “lower urinary tract signs” (LUTS), including pollakiuria, periuria, hematuria, and stranguria. Feline idiopathic cystitis is a frequent cause of LUTS in cats around the world, especially young to middle-aged cats, and proves frustrating for caregivers and veterinarians considering its propensity for recurrence, albeit typically with short, self-limiting episodes, and in male cats, painful, potentially life-threatening and expensive urethral obstruction.

While the most obvious manifestations of FIC are LUTS, and the tendency to focus on bladder and urethral pathology thus understandable, diagnostic and treatment focus has shifted from recognition of and interest in abnormalities within the bladder to abnormalities outside the bladder, including persistent activation of the central stress response system by stressors and altered interplay between neurologic, endocrine, and immunologic systems.^{1,2} Interaction between environmental factors, these body systems, and the urinary bladder likely precipitate FIC manifestation.

Considering stress in diagnostic approach

Clinical assessment for identification of FIC has traditionally focused on what “is not there,” i.e., cats with FIC do not have clinical bacterial infection, urolithiasis, neoplasia, or other structural pathology of the bladder and/or urethra. Diagnostic investigation, ideally including urinalysis, aerobic urine culture, and imaging of the urinary tract generally has the aim of exclusion of these local conditions such that a diagnosis of FIC can be more comfortably made.

Shifting the focus to potential stressors (what “is there”) leads to a more balanced diagnostic focus, as cats predisposed to FIC seem less able to negotiate challenging environments than unaffected cats.^{2,3} Namely, what can be gleaned from sensitively taking a comprehensive history and inventory of the home environment that will assist in identification of possible stressors and provide potential therapeutic targets? There are several questionnaires designed for the caregivers of cats with LUTS that can be employed

Of Note

- Stressors that do not similarly impact unaffected cats activate the central stress response system in predisposed cats and precipitate episodes.
- Focusing treatment on the bladder is unlikely to lead to substantial improvements in cats with FIC.
- Therapeutic intervention requires a multimodal approach that recognizes the more systemic nature of the condition and the role of stress and environment.

to collect rich information concerning environment; provision of resources; interaction with other cats, non-feline pets, and people; other potential stressors; and diet.² These questionnaires serve the dual purpose of educating caregivers as to the way that cats engage with the world and their human and animal housemates and informing veterinarians.

Stress and therapeutic interventions for FIC

Therapeutic interventions for FIC that fail to address the key role of stress run the risk of incomplete or negligible impact on disease severity and recurrence. The best recognized approach to mitigating the stress component of FIC is implementation of multimodal environmental modifications (MEMO), individualized environmental adjustments aimed at reducing the likelihood of activation of the central stress response system, e.g., improved litter box management, provision of resting perches, enhanced caregiver-cat interactions, and identification and mitigation of intercat tension (**Box 1**).⁴ Multimodal environmental modification is frequently recommended by veterinarians although more consistent provision of advice on litter box management, private physical space, social interaction, and natural behavior is desirable.^{3,5} Caregivers appear

Box 1. Recommendations for historic and therapeutic focus in cats with FIC^{1,4}

Key aspects of history taking	Key aspects of therapeutic planning
Presence of other cats in household Intercat tension Access to litter box and outdoors Litter box and resource management Daily human-cat interaction [#] , e.g., play, brushing Recent travel Moving house	Diet management* Water intake management* Litter box management Private space management [^] Social interaction management [^] * Natural behavior management [^] *

[#]Minority of caregivers questioned on this factor by veterinarian³

[^]Minority of caregivers provided with guidance on this factor by veterinarian⁵

*Factors identified by owners as initially challenging to implement⁵

largely capable of making recommended changes and open to advice from veterinarians.⁵

Change of diet to a “urinary diet” is frequently recommended,^{3,5} but may do little to mitigate the impact of stress, apart from potentially diets that provide enrichment or contain “anti-stress” ingredients such as tryptophan and alpha-casozepine, and could increase stress if introduction is abrupt and/or diet undesirable to cat. Further considerations include cost and challenge of feeding to one cat in multi-cat households.⁵ Discussion of nutrition with caregivers is important; however, diet change alone is unlikely to be successful and is better considered a component of the long-term management plan.

Few studies have examined use of synthetic pheromones or anxiolytic medications, but these may be beneficial in some cases in which stressors cannot be sufficiently ameliorated and/or in cats showing inadequate response to comprehensive environmental interventions.

Pre-empting development of FIC in predisposed cats

A further consideration is that as cats that develop FIC are less able to withstand stressors, and therapeutic intervention for FIC requires management of stress and environmental enrichment, there may be ways to subvert disease development by educating caregivers

of young, unaffected cats. Greater awareness as to lifestyle and health factors that may increase the risk of FIC development, provision of enriched environments with plentiful resources for each cat, and education on recognition of intercat tension and optimization of interaction with caregivers, other cats, and other pets may prove a valuable investment.^{2,5}

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Nutritional strategies for managing feline idiopathic cystitis

Camille Torres-Henderson, DVM, DACVIM (Nutrition), DABVP (Canine/Feline)

Colorado State University, Fort Collins, Colorado, USA

Feline idiopathic cystitis (FIC) is a frustrating and common cause of feline lower urinary tract signs (LUTS). While most cases are self-limiting and resolve within 2–7 days, 40–65% of cats experience recurrence within a year.¹ This creates an opportunity to incorporate nutrition as part of a long-term management strategy aimed at reducing recurrence and supporting long-term urinary health. Because FIC is complex and involves factors outside of the bladder, including activation of the central threat response system (CTRS), dietary management alone is unlikely to immediately resolve clinical signs.^{1,2} However, over time, nutrition may help reduce recurrence and improve long-term management when included in a multimodal plan.²

Nutritional goals

Historically, many therapeutic urinary diets used for cats with lower urinary tract disease were formulated to acidify the urine and reduce struvite crystal formation. Earlier studies evaluating these diets reported reduced recurrence of LUTS in some cats with FIC.³ However, our understanding of FIC has evolved over time, and current nutritional strategies are generally focused more on increasing water intake, promoting urine dilution, and reducing stress as part of a broader multimodal management approach.

Why moisture matters

Increasing moisture intake remains one of the most clinically relevant nutritional strategies in management of FIC.³ Cats have a naturally low thirst drive and often consume low-moisture diets, resulting in relatively low total water intake. Increasing dietary moisture can help increase urine volume and reduce urine concentration, which may help reduce bladder irritation in some cats. Some earlier studies reported reduced recurrence of lower urinary tract signs in cats fed canned therapeutic urinary diets, although small sample sizes made the magnitude of benefit difficult to fully understand.³

Because therapeutic urinary diets are often formulated to encourage water intake and promote urine dilution, they are commonly recommended as part of long-

Of Note

- For most cats with FIC, practical nutritional strategies should prioritize enhanced water intake, a diet the cat will readily and consistently eat, and gradual, low-stress diet transitions.
- Nutritional management is typically most effective when part of a comprehensive management plan.

term management for cats with FIC. Compared with standard maintenance diets, these diets may also differ in mineral balance, fatty acid profiles, and inclusion of ingredients intended to support stress management, which may all contribute to their benefit in some cats with FIC.

From a practical standpoint, feeding a wet therapeutic urinary diet is often one of the easiest ways to help increase water intake. Additional strategies such as adding water to food, offering multiple water sources, or using water fountains may help support hydration, although individual responses can vary considerably (**Figure 1**).

Other nutritional approaches

Dietary supplements marketed for “urinary health” may also have a role in management of some cats with FIC, although more work is needed to better understand their effects. Currently, these products should not be considered replacements for established multimodal management strategies. Urine acidification itself has not been shown to improve signs of non-obstructive FIC, so supplements primarily intended to acidify the urine may not provide meaningful benefit for these cats.

Body condition is another important consideration, as obesity has been identified as a potential risk factor

Figure 1. Suggest owners offer multiple drinking options to identify their cat's preferences, if any



for FIC in observational studies.⁵ Although a causal relationship has not been established, achieving and maintaining a healthy body condition could represent one additional strategy to help reduce recurrence over time in overweight or obese cats with FIC.

Client communication

Client communication is an important component of successful management. Cats with FIC are often sensitive to changes in their environment and may find sudden dietary changes stressful. Abrupt diet transitions may negatively affect food intake or increase tension within the household and thus should generally be avoided.⁶

Instead, cats should be given the opportunity to gradually explore a new diet alongside familiar foods. Allowing choice and control during the transition process may help reduce stress associated with diet change and improve long-term acceptance. It is also important to discuss environmental and stress-related factors that may contribute to recurrence of FIC.

Clinical message

For most cats with FIC, practical nutritional management should focus on increasing water intake, selecting a diet the cat will consistently accept, and avoiding stressful or abrupt diet transitions. Nutritional management is often most successful when incorporated into a broader management plan that includes analgesia, environmental modification, stress reduction, and management of household conflict or

other stressors. The 2025 iCatCare consensus guidelines specifically emphasize the importance of pain management, reinforcing the need for a multimodal approach.²

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Did the cat get the MEMO: How Multimodal Environmental MOdification can help with feline idiopathic cystitis

Mikel Maria Delgado, PhD, CAAB, CCBC
Feline Minds, Sacramento, California, USA

Feline idiopathic cystitis (FIC) is a common cause of urinary tract signs in cats, including house soiling and hematuria. A threatening environment is considered a major contributing factor in the activation of the cat's central threat response system (CTRS), which has downstream impact on various organs, including the bladder, as well as on immune and endocrine functioning.^{1,2}

Risk factors for FIC

Typically, once other medical conditions (e.g., urolithiasis) have been ruled out and environmental and individual risk factors have been identified, a diagnosis of FIC is made. Risk factors include:

- Early-life adverse events such as maternal stress, early weaning, or food scarcity
- Living in a multi-cat household or other social challenges
- Indoor-only housing
- Inadequate environmental resources, e.g., litter boxes, perches
- A lack of enrichment/mental and physical stimulation
- Lack of ability to express species-typical behavior such as scratching, climbing, and hiding
- An unsanitary or challenging litter box set up
- Lack of control and choice in the environment
- Obesity

Although some risk factors are predispositions out of most caregivers' control¹ the majority are related to a cat's environment, which is controlled by the humans they live with.¹⁻⁵

Changes that offer choice and control to cats

The specific areas of MEMO that should be addressed are nutrition (food and water), elimination (litter box), physical space, social interactions, and natural

Of Note

- **Stressful living conditions or individual predispositions may contribute to onset of FIC.**
- **Multimodal environmental modification (MEMO) is considered effective and clients are generally accepting of making changes.**
- **Environmental domains to address include nutrition, the litter box, other physical space, social relationships, and natural behaviors.**

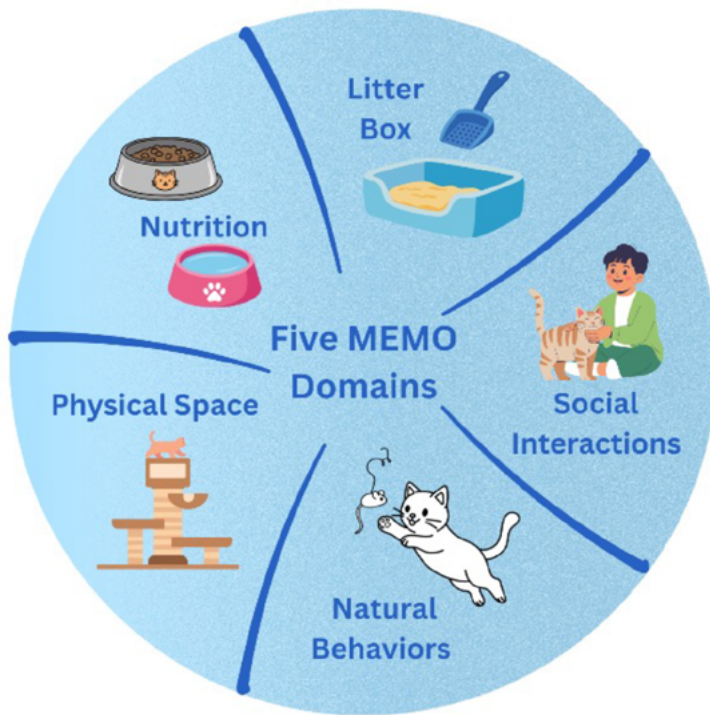
behaviors.^{1-3,5} Research has shown that veterinarians giving advice focus mostly on the nutritional aspects of treatment.³ However, adherence and satisfaction are high when caregivers are also advised on the other aspects of MEMO.³ Let's look at the five areas and how caregivers can make adjustments in their homes (**Figure 1**).

Nutrition: Adding wet food to the cat's diet; multiple feeding stations (at least one per cat); offering dry food in food puzzles if the cat is highly food-motivated and healthy; providing multiple sources of clean water, including fountains.

Litter box: Providing multiple litter boxes in safe (considering the cat's perspective), accessible locations; scooping the litter box twice daily; using a clumping-style, unscented cat litter; using large, open litter boxes.

Physical space: Providing the cat with places to rest, climb, and hide as needed, e.g., cat trees/shelving, beds, caves/cubbies; providing safe outdoor access (via a catio, enclosed yard, or cat harness/stroller) as suits the individual cat.

Figure 1. MEMO domains



Social interactions: Adequate resources for the number of cats in the home; giving cats gentle, positive interactions with humans; using positive-reinforcement based training methods; introducing new pets slowly and safely.

Natural behaviors: Giving the cat suitable outlets for natural behaviors such as hunting (through interactive play), climbing, and scratching. Providing opportunities for problem solving and mental stimulation (e.g., through training and food puzzles).

Getting caregivers on board

Although more research is needed, MEMO is considered one of the more effective treatments for FIC.^{2,6} When presented with a cat with FIC, discuss the five MEMO domains with the caregiver. Identify specific areas to address for improvement. For example, if the cat is exhibiting house soiling, the litter box set up likely needs adjustment. If there is tension between individuals in the home, then environmental changes such as an increase in or rearrangement of resources will be helpful. Vertical spaces can also help when cats are stressed by other cats, dogs, or children in the home.^{2,4,5} Mental stimulation and interactive playtime reduce anxiety and do not require a huge time commitment each day—even a few minutes of play or training can have a big impact!^{2,5}

Our goals are to make changes slowly so as not to overwhelm the cat and to keep the modifications feasible for clients. If your client needs further help prioritizing MEMO, or there are more complex problems in the environment (such as fighting between cats), do not hesitate to refer caregivers to a veterinary behaviorist or other qualified cat behavior professional.

Why MEMO works

Giving cats a sense of control and choice can reduce stress, which decreases the activation of the CTRS, reducing painful sensations and other physical signs that lead to FIC. Environmental changes can help cats feel like they can rest and navigate their environment safely, reducing tension between cats and other household members. We can improve outcomes for cats by giving them a home that respects their instincts and natural behaviors, and improves their litter box environment, which is a critical resource for cats. We can decrease anxiety by providing exercise and mental stimulation, which are known to have anxiolytic effects across species. Most importantly, MEMO improves the caregiver's relationship with their cat, which is key to keeping cats thriving in their homes.

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