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PRACTICING CAT FRIENDLY

The articles presented by the **American Association of Feline Practitioners** (AAFP) focus on feline-specific information on cats' unique behaviors; diagnosis and evaluation of disease and conditions; better approaches and techniques for cats; and strategies to decrease stress associated with the veterinary visit for cats, caregivers, and your team.

CONTINUING EDUCATION

FELINE MEDICINE

Pandora Syndrome in Cats: Diagnosis and Treatment

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The term "Pandora syndrome" is based on 4 decades of research and clinical experience[1-4] with cats with chronic lower urinary tract (LUT) signs (i.e., hematuria, pollakiuria, periuria, and stranguria). In 1983, when I began studying LUT signs in cats, they were referred to as "feline urological syndrome" (FUS)[5] or "feline lower urinary tract disease" (FLUTD)[6] and were thought to result from consumption of an improperly formulated diet that contained too much magnesium and that resulted in a urinary pH that promoted formation of a magnesium-ammonium-phosphate (struvite) stone, which was the proximate cause of the LUT signs.[7] It has turned out that nearly all of this explanation was wrong. Struvite urolithiasis was found not to be the most common cause of chronic LUT signs; rather, reducing the magnesium and urine pH (primarily by adding acid to the diet) only succeeded in a shift from the most prevalent stone type being struvite to about half of stone diagnoses being calcium oxalate, and cats continued to suffer from chronic LUT signs without any stone present at all.[8]

In the early 1990s, the National Institutes of Health's National Institute of Diabetes and Digestive and Kidney Diseases released a request for proposals for animal models of a chronic pelvic pain syndrome in humans, called interstitial cystitis. My colleagues at Ohio State University and I applied, were funded, and received around 200 donated cats to study. These cats were no longer acceptable as pets because of intractable LUT signs and, alternatively, would have been euthanized by their primary care veterinarian.

Two things immediately stood out about these cats. First, many had histories of other health problems; second, all of their signs resolved after entry into our (enriched) cat colony. These and other observations[2] led us to the idea that "feline interstitial cystitis" might be the result of some disorder affecting the urinary bladder rather than being an actual urinary bladder disease. In humans, more comprehensive investigations of patients with interstitial cystitis and a variety of related disorders also resulted in the suggestion of comparable descriptive terms to describe the multiple abnormalities in these patients, such as "medically unexplained syndrome,"[9] "bodily distress syndrome,"[10] or "central sensitivity syndrome."[11,12]

LOWER URINARY SIGNS?
Consider the Pandora syndrome.

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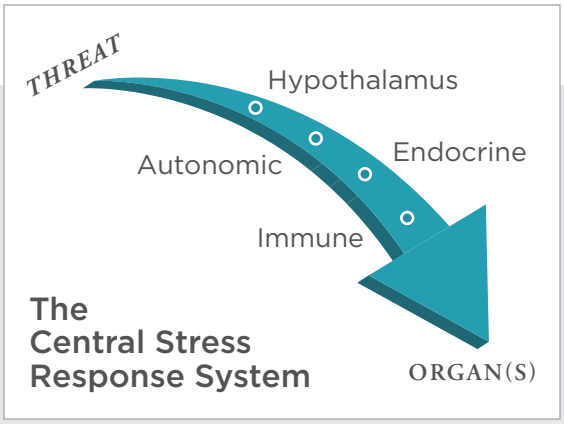


FIGURE 1. The central stress response system.

For what seemed to be a similar syndrome in cats, I proposed the term "Pandora syndrome"[2] to describe the signs exhibited by domestic cats receiving veterinary care for chronic clinical signs referable to many organ systems. The name is derived from the many complicated problems released when Pandora opened the mythical box she encountered. These cats experience variable combinations of a

- history of early adverse experience or severe stressful events
- comorbid health problems
- waxing and waning of clinical signs associated with environmental events

Nearly all of these cats also respond to Multimodal Environmental MOdification (MEMO) with resolution of *both* the index and comorbid signs. Use of the term "Pandora syndrome" avoids applying any particular organ name to the disorder in the absence of evidence that the disease arose in the LUT (and presence of evidence that it did not), as opposed to the LUT being affected by pathology in another system.

CENTRAL STRESS RESPONSE SYSTEM

Pandora syndrome is an "anxiopathy": that is, a pathologic condition resulting from chronic activation of the central stress response system (CSRS) (**FIGURE 1**). Persistent activation of this system by a chronic perception of threat that exceeds the animal's perception of control mobilizes activity in variable combinations of the autonomic nervous, endocrine, and immune systems. The result can be pathology affecting any organ system or combination of organ systems (**TABLE 1**).

The variability in response to chronic perception of threat may result from organ-specific differences in familial (genetic, epigenetic, environmental) vulnerability and from exposure to threatening events such that the CSRS is durably sensitized to the environment. Such events often occur early in life, even before birth when the CSRS is most plastic and vulnerable to the events

TABLE 1 Signs That May Indicate Pandora Syndrome

SYSTEM	SIGNS OR DISORDERS
Behavioral	Excessive hiding, pica, aggression, periuria, perichezia
Cardiovascular	Hypertrophic cardiomyopathy, saddle thrombi
Endocrine	Obesity, type 2 diabetes mellitus, others?
Gastrointestinal	Odontoclastic resorptive lesions, regurgitation, vomiting, hairball expulsion, large bowel diarrhea, perichezia
Immune	Upper respiratory infections
Nutritional	Obesity, finicky eating
Respiratory	Asthma
Skin	Overgrooming, chin acne, atopy, behavioral ulcerative dermatitis
Urinary	Stones, interstitial cystitis, periuria, spraying, chronic kidney disease

communicated to it by the mother through the placenta.[13] However, the CSRS can be sensitized by sufficiently harsh events at any time of life.

DIAGNOSING PANDORA SYNDROME

Many organ systems are represented in expression of Pandora syndrome (**TABLE 1**), and the list is undoubtedly not comprehensive. Moreover, Pandora syndrome is only *one* possible cause of the disorders listed and may or may not be eventually added to the differential diagnostic criteria for that disorder.

Provisional criteria for diagnosis of Pandora syndrome are presented in **BOX 1**. The signs and sickness behaviors seem to wax and wane in response to environmental events more so in patients with than those without Pandora syndrome; however, this observation has not been adequately researched. The perception of threat associated with any serious chronic disease also has the potential to chronically activate the CSRS. In addition, one might consider whether the signs are disproportionately severe in relation to any pathology identified. For example, in humans, symptoms of ulcerative colitis are proportional to the severity of the pathology: whereas symptoms of irritable bowel syndrome may be severe in the absence of any identifiable bowel pathology. Of note, the diagnosis of Pandora syndrome is strengthened (perhaps confirmed) when *all* of the patient's signs subside in response to effective MEMO.[1]

A tentative diagnosis of Pandora syndrome rests primarily on the results of a comprehensive history and physical examination. For cats with chronic recurrent problems, it may be worth your time to repeat the history and physical examination, saving the primary complaint for last. I have developed forms to guide the health history and household evaluation (indoorpet.osu.edu).[14] When the patient lives in a multicat household, I collect a health history for all cats in the household because these other cats also can have health problems that may be playing into the patient's problem, or they may reveal a source of conflict between cats. Whenever possible, I review the home environment in person, to evaluate the quality of resources for safe space; food and water availability, location, and management; litter box hygiene, location, and management; and opportunities for activity, play, and social contact. When the client completes the forms, I go over them with the client. I praise clients for everything they are doing right and offer coaching for areas that may benefit from modification.[14]

Whether in person or from a completed form, I look for the following:

Life history: Events in the cat's life history include early adverse experiences, such as being found as a stray or orphaned (especially if bottle fed) and exposure to serious trauma or environmental instability.

Health history: Indications of multiple problems, especially if recurrences are frequent and associated with identifiable environmental stressors and fearful or anxious behavior.[14]

Home environment: Evidence that the cat has a safe and secure resting space, ample resources located and managed appropriately, and the opportunity to interact on its own terms with the environment, including with people and other animals in the home. Although counterintuitive, some cats with Pandora syndrome (mostly males in my experience) exhibit more dog-like behavior, such as following their people around the house.

BOX 1 Diagnosing Pandora Syndrome

Exclusion criteria
- Other causes of signs
- Incompatible history physical, lab, imaging, etc.
- Explainable peripheral pathology

Inclusion criteria
- (Early) adverse experience
- Comorbidity, sickness behaviors
- Waxing and waning signs
- Global response to MEMO

MANAGING CATS WITH PANDORA SYNDROME

Acute Care

Decisions about medical care of cats with Pandora syndrome depend on the specific presenting problem(s). If the cat is hospitalized, careful consideration of the quality of the cage

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BOX 2 Physiologic Parameters That Indicate Stress

Increase in presence of:

- Pupil diameter
- Respiratory rate
- Temperature
- Heart rate
- Blood pressure
- Sweaty paws
- Excessive shedding
- Flushing (blushing of skin)
- Anxious lip-licking

environment may help the cat cope with this confinement.[15,16] Questions remain about whether to treat the specific problem(s) or wait to see whether treating the environment first resolves the problem(s) and about whether some combination of pharmacologic and MEMO intervention is most appropriate for any individual patient. Only properly designed and conducted studies in the future will be able to address these questions.

Because cats tend to form attachments to places, confinement in places where they don't feel safe can adversely affect their behavior and physiology. Fortunately, effectively enriching these spaces can mitigate their perception of threat.[17] Enriched conditions permit cats to cope with their surroundings and feel safe in their space.

For cats housed in veterinary hospitals, factors inside and outside the cage can affect their welfare.[17]

Inside the cage, each cat needs the following:

- **A place to hide.** Cats hide to escape threats and to keep warm. They also need something to scratch and/or perch on, which we place at the back of the cage to try to help the cat feel safer.
- **Bedding.** Cover the bottom of the cage completely because bare surfaces can be cold and uncomfortable. Bedding with the cat's and client's scent also may reduce the cat's perception of threat. Because most cats prefer familiar bedding, change bedding only when soiled (rather than daily).
- **Food and water.** If feasible, feed the cat its usual food. To help the cat feel safer, place the food and water bowls at the back of the cage, as close as possible to the hiding place.
- **Litter box.** Because the litter box is used less frequently than food and water bowls, it can be can be placed at the front of the cage.
- **Covered door.** To reduce potentially threatening stimulation, cover as much of the cage door as possible.

Because most cats prefer familiar bedding, change bedding only when soiled (rather than daily).

More detailed information about caring for hospitalized cats is available at indoorpet.osu.edu

Outside the cage, control the following to minimize stress[16]:

- **Lights.** If natural light is not available, either use a timer to provide predictable lighting from day to day or turn lights on and off manually at the same time each day. Do *not* turn lights on and off each time someone goes in and out of the ward.
- **Noise.** Keep noise levels in the ward to a minimum, ideally <60 dB (which is quiet conversational level and can be measured with smartphone apps).
- **Music.** Some cats benefit from hearing music (played softly).
- **Odors.** Minimize smells such as those from dogs, other cats, perfumes, alcohol (from hand rubs), cigarettes, and cleaning chemicals (including laundry detergent). All can be aversive and stressful, especially to cats confined in a cage where they can't move away from the odors.
- **Temperature.** Cats prefer warm temperatures, 85˚to 100˚F.[18] Provide bedding that allows cats to "cocoon" to retain warmth if they choose to do so.
- **Daily routine.** To increase predictability, perform cleaning, feeding, and treatment procedures as close as possible to the same time each day, preferably by the same person. Return cage furnishings to the same place after spot cleaning, and house each cat in the same cage throughout its stay.
- **Attention.** Whenever possible, dedicate a familiar person to pay extra attention to the cat, in the form of brushing or playing.

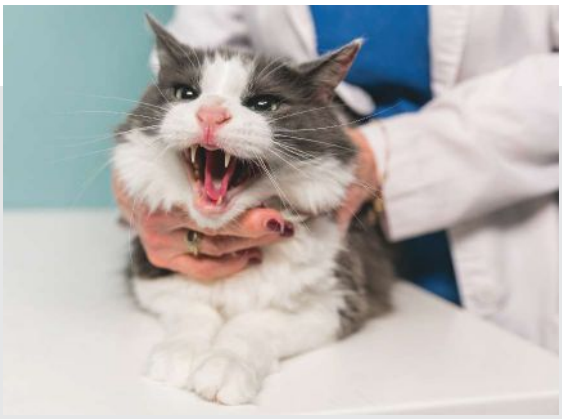


FIGURE 2. Minimal restraint of stressed cat.

Courtesy AAFP

- **Low-stress handling.** Use low-stress techniques to minimize activation of the cat's CSRS (**FIGURE 2**).

Indications that something may be wrong with caged cats include the cat's "resting" in the litter box with no sign that the cat has moved around the cage since the last cleaning or, the opposite, a cage that is in disarray. Sickness behaviors also are cause for concern.[3] These signs include vomiting, diarrhea or soft feces, no eliminations in 24 hours, urinating or defecating out of the litter box, anorexia or decreased appetite, lethargy, and/or not grooming.[3]

You can determine that a cat feels threatened by observing changes in its physiology (**BOX 2**) and behavior (**BOX 3**), recognizing that the changes in one cat might differ from those of another cat that feels similarly threatened. Any housing situation or handling technique can be evaluated by assessing physiologic and behavioral parameters associated with perception of threat before and after applying MEMO, which usually becomes more effective after repeated uses.

CHRONIC CARE

Treating the Client

Clients bring cats with Pandora syndrome to us to diagnose the cause of whatever signs concern them most. A diagnosis of Pandora syndrome means that we have identified an anxiopathy and, to the extent possible, have excluded other causes of the signs. In my experience, the most important consideration for a successful outcome for cats with Pandora syndrome is effective and empathic communication with the client.[14] When a complete evaluation of the cat leads to the conclusion that Pandora syndrome is likely (pending observation of responsiveness to MEMO), we explain to the client that although no cure is currently available, appropriate therapeutic and MEMO procedures can help. We tell clients that these procedures generally keep the cat's clinical signs to a minimum, increase its disease-free interval, and can usually be provided in collaboration with a trained technician. We also demonstrate empathy by listening carefully to the client's (often frustrated) story of the effects of having a cat with Pandora syndrome, provide a satisfactory explanation for the sources of the signs, express care and concern for the situation, and enhance the client's perception of control. Effective doctor-client interactions appear to enhance adherence to treatments and quality-of-life outcomes.[19] We can then prescribe any appropriate therapies and, when possible, introduce the client to the technician or other staff member trained to care for cats with Pandora syndrome. This person will coach the client on how to implement MEMO. The formality of this introduction demonstrates that we intend to sustain the partnership with the client through our technical support staff to gain control of the patient's clinical signs.

Treating the Cat

Diet and feeding management. Some diets are marketed for stressed cats, but their effectiveness at managing most manifestations of Pandora syndrome has yet to be evaluated, and their salutary effects, if any, seem modest.[20,21] Moreover, studies have shown that for many cats, Pandora syndrome can be effectively managed without any diet change.[1,3,22] For most cases, I recommend that clients choose whichever

BOX 3 Behavioral parameters/body postures

- Immobility, hiding, cowering, or freezing behaviors
- Attempts to run away or avoid handlers
- Defensive aggression (hissing, growling, spitting, tail twitching, ear flicking, scratching, biting)
- Friendly approach to caregivers
- Purring, kneading, rubbing
- Interest in food
- Relaxed body postures
- Normal eliminations

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Effective MEMO creates conditions that permit the patient to feel safe and to have unrestricted access to species-appropriate novelty, activity, and interactions with other animals (including humans).

diets (Association of American Feed Control Officials [AAFCO]-labeled) fit their personal preferences and then offer the cat a few samples of these at mealtime so the cat can express its preferences. I recommend this approach to minimize the effects of perception of diet on the activation of the CSRS of both the client and the cat. A detailed discussion of the pros and cons of diet therapy for all manifestations of Pandora syndrome is beyond the scope of this article. If a diet change seems appropriate, to reduce the risk of inducing a learned aversion to the new food, I recommend implementing it only after the cat has returned home and is feeling better.

Pharmacotherapy. Choices for drug therapy, if any, depend on the individual cat's manifestation(s) of Pandora syndrome. A variety of drugs have been recommended for use in cats with "feline idiopathic cystitis."[23] However, to my knowledge, no studies comparing their effectiveness with that of MEMO have been published. There also are hazards associated with drug therapy for cats, which include the aversion of many cats to chronic administration of oral medications and potential adverse effects. With regard to drugs that target anxiety in general, a recent review of behavioral psychopharmacology in cats reminds us that "There are no approved behavioral drugs for cats. Using any of the previously mentioned medications for purposes other than the indications listed on the label and the use of any psychoactive medication not listed previously is considered extralabel use and falls under the rules of the Animal Medicinal Drug Use Clarification Act of 1994 and its implementing regulations."[24] The review goes on to speculate that maropitant citrate (cerenia.com; zoetis.com) "has the potential for many additional uses including as an adjunct medication for the treatment of pain and as a mediator of the stress response during handling and hospitalization." Unfortunately, there is no published evidence to support this speculation with regard to cats, and studies in other species suggest that effectiveness in the situations described is highly unlikely.[25] One (manufacturer-funded) 4-week study[26] evaluated use of alpha-casozepine in anxious cats, but the statistics reported leave one skeptical of the results. To my knowledge, no randomized controlled trials of use of alpha-casozepine in cats with Pandora syndrome have been conducted. In fact, the role of anxiolytic drugs in the treatment of many manifestations of Pandora syndrome remains an open question.

Treating the Environment: MEMO

If cats with Pandora syndrome have a sensitized CSRS, then the treatments most likely to be effective are those that reduce cats' perception of threat and increase their perception of control. Environmental conditions are known to affect the behavior and health of animals,[27] particularly captive animals.[28,29] Effective MEMO creates conditions that permit the patient to feel safe and to have unrestricted access to species-appropriate novelty, activity, and interactions with other animals (including humans). Effective MEMO for cats means provision of all necessary resources, refinement of interactions with the clients, an intensity of conflict that is tolerable, and thoughtful institution of change(s) to the cat's environment (its territory). It extends the "1+1" rule traditionally applied to litter boxes (1 for each cat in the home, plus 1 more) to all pertinent resources (particularly resting areas, food bowls, water bowls, and litter boxes).

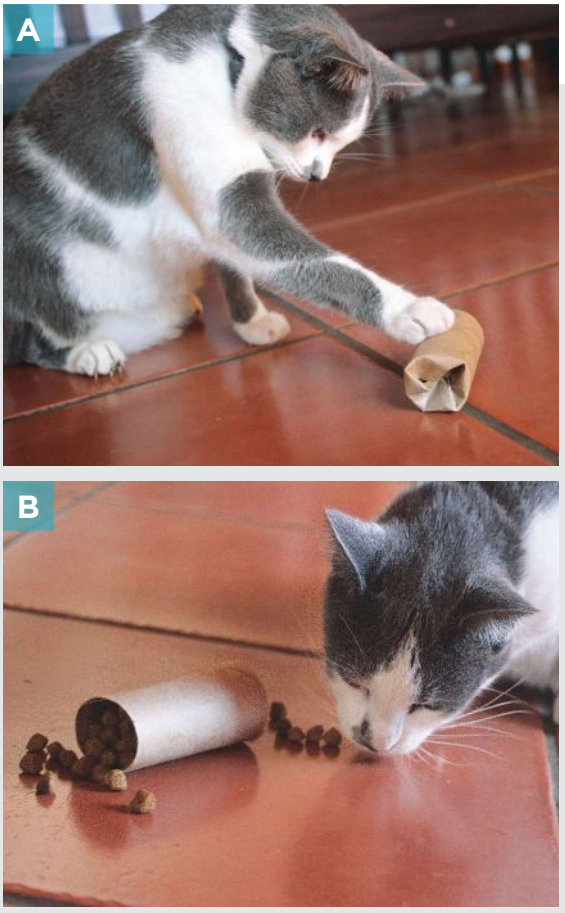
The components of MEMO are as follows:

Space. Each cat needs a safe refuge: a cozy bed in a desirable (to the cat) location in the home and outfitted for the cat's comfort. A good refuge is a cat carrier, with the added benefit that habituating the cat to the carrier also facilitates crating the cat for medical care and other travel. Cats also interact with the physical structures in their environment; they need opportunities to scratch (both horizontal and vertical surfaces), climb, hide, and rest, preferably in multiple locations in the home.

A study reported that for some cats, enrichment can be enjoyed in the form of scents (e.g., catnip, silver vine, Tatarian honeysuckle, and valerian [a constituent of Feliway spray[30]]).[31] Another study reported the following preferences indicated by domestic cats: social

interaction with the owner (50% of cats), food (37%), toys (11%), and scent (2%).[32] Significantly more cats preferred social interaction over toys and preferred food over scent.

Food. Cats prefer to eat individually in a safe, quiet location where they will not be startled by other animals, sudden movement, or sudden activity of an air duct or appliance.[33] Some cats prefer wet foods, possibly because of the potentially more natural feel in their mouth; others prefer dry foods. When a diet change is appropriate (and agreed to by the client), offering the new food in a separate container next to the usual food, rather than removing the usual food and replacing it with the new food or mixing foods, permits cats to express their preferences. Natural cat feeding behavior also includes predatory activities such as stalking and pouncing. These behaviors may be simulated by hiding small amounts of food around the house or by putting food into food puzzles (foodpuzzlesforcats.com)[34] (**FIGURE 3**).



Clockwise from right: Courtesy AAFP; shutterstock/jessjeppe (2)

FIGURE 3. (A) Cat with food puzzle, unsolved. **(B)** Solved.

Litter boxes. Cats may display litter box issues even in the absence of LUT signs. A detailed discussion of litter box location (safe), size (big), litter type (ask the cat), and management is beyond the scope of this article; excellent recommendations are available from the American Association of Feline Practitioners (AAFP) (catvets.com) and elsewhere.[35-37]

Play. Cats may enjoy play interactions with their people and can be easily trained to perform certain behaviors (i.e., tricks).[38] Clients just need to understand that although cats readily respond to positive reinforcement (food), they do not respond to punishment like more group-social species because this form of social interaction never entered their behavioral repertoire. Cats also seem to be more amenable to learning if the behavior is shaped before feeding. These cats seem to like novelty, so providing a variety of toys, rotated or replaced regularly, can sustain their interest. Identifying a cat's prey preferences enables clients to provide toys that the cat will be most likely to play with (**FIGURE 4**). For example, some cats prefer to chase birds, whereas others prefer to chase mice, lizards, or bugs. In contrast to play, some cats seem to prefer to be petted and groomed.

Conflict. Like most of us, when a cat feels threatened, it often responds by attempting to restore its perception of control. During such responses, some cats become aggressive, some become withdrawn, and some become ill. Intercat conflict may occur when multiple cats are housed indoors together and health problems are present.[35] Conflict among cats can develop because of perceived threats to their status in the home, access to valued (or scarce) resources (e.g., food, resting areas, litter boxes, human attention), other animals in the



FIGURE 4. Content cat with toy mouse.

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Providing an environment that is compatible with cats' behavioral needs often seems to mitigate the effects of at least some manifestations of Pandora syndrome in addition to promoting their general health and welfare.

home, or outside cats. Providing a "house of plenty" may minimize these risks. More information about addressing conflict is available at indoorpet.osu.edu.

FOLLOW-UP

All the information that clients need can sometimes overwhelm them. Try using a household evaluation checklist (indoorpet.osu.edu) to focus conversation on changes that the client perceives to be most important and is most willing to make. I try to follow up with clients in a couple of days to see what questions have come to their mind and what they have managed to do. I always ask, "How is your cat doing?" and "How are you doing?" I then contact them again in 1 to 2 weeks to learn how things are going and to provide support. If implementation of the changes has been successful, we move on to additional changes. In my experience, a time usually comes (and often quite quickly) when the client "gets it" and can continue on without additional coaching.

PREVENTION

The most effective approach to development of Pandora syndrome is prevention. Vulnerability to Pandora syndrome can develop after significant adverse experiences, particularly early in life.[13] This vulnerability may be unmasked by chronic perception of threat later in life and can be mitigated by effective MEMO.[1,39] The husbandry implications of this information are clear: to the extent that we can convince ourselves and our clients of the value of effective environmental enrichment for all cats, and then find and implement ways to provide it, we all—cats, clients, and veterinary staff—are likely to enjoy better health and well-being and may minimize the risk for Pandora syndrome.

CONCLUSIONS

Many confined cats seem to cope with less-than-optimal environments. However, underlying differences in neuro-endocrine-immune responses identified in some cats with Pandora syndrome may limit their adaptive capacity; these cats may represent a separate population with increased vulnerability to provocative environments. Moreover, as veterinarians we should be concerned with providing cats with an optimal environment, not just providing the minimal requirements for their survival.

Providing an environment that is compatible with cats' behavioral needs often seems to mitigate the effects of at least some manifestations of Pandora syndrome in addition to promoting their general health and welfare. This is not to say that the absence of environmental enrichment causes Pandora syndrome in cats, only that it may unmask an underlying vulnerability in some cats.[40] Moreover, I do not advocate limiting MEMO for only those cats with health problems. Provision of effective environmental enrichment is built on the foundation of the Five Freedoms of Animal Welfare[41,42]:

1. freedom from hunger and thirst
2. freedom from discomfort
3. freedom from pain, injury, or disease
4. freedom to express normal behavior
5. freedom from fear and distress

Environmental enrichment is crucial for the health and welfare of *all* cats under our control. As their caregivers, it is our responsibility to provide enriched environments so that *all* cats can thrive in our care. TVP

Additional Resources

- AAFP, a source of a variety of practice guidelines (catvets.com/guidelines/practice-guidelines) and resources for veterinarians and cat owners (catvets.com)
- The Cat Community, a new AAFP resource for cat owners (catfriendly.com)
- The CATalyst Council, resources, including videos, about cat behavior, nutrition, healthcare, and welfare (catalystcouncil.org)

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PEER REVIEWED

CONTINUING EDUCATION

Pandora Syndrome in Cats: Diagnosis and Treatment

LEARNING OBJECTIVES

After reading this article, you will be able to

- Describe how chronic stress (threat) affects confined cats
- Explain how (early) life events affect stress responses
- Differentiate between "disease" and "sickness behavior" in cats
- Diagnose Pandora syndrome and provide acute and chronic care for patients
- Implement effective environmental enrichment for all confined cats

TOPIC OVERVIEW

Pandora syndrome describes an "anxiopathy," a pathologic condition resulting from anxiety associated with chronic perception of threat. This article suggests provisional criteria for the diagnosis and makes general recommendations for MEMO[1] to increase the patient's perception of control and reduce its perception of threat.

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1. **Pandora syndrome is**
   a. An acronym
   b. An eponym
   c. An anxiopathy
   d. A Greek tragedy
   e. None of the above

2. **The central threat response system includes**
   a. The autonomic nervous system
   b. The endocrine system
   c. The immune system
   d. B only
   e. A, B, and C

3. **System(s) affected by Pandora syndrome include**
   a. Any organ system
   b. Multiple organ systems
   c. A and B
   d. Only the urinary bladder
   e. Behavior only

4. **Diagnosis of Pandora syndrome includes**
   a. Early adverse experience
   b. Waxing and waning signs
   c. Sickness behaviors
   d. Global response to MEMO
   e. All of the above

5. **Acute therapy for hospitalized cats with Pandora syndrome includes**
   a. Optimizing the cage environment
   b. Optimizing the ward environment
   c. Consistent and predictable daily routines
   d. Care by the same person
   e. All of the above

6. **Assessment of a confined cat's perception of threat can include evaluation of**
   a. Physiologic parameters
   b. Body postures
   c. Behavioral parameters
   d. A, B, and C
   e. None of the above

7. **Chronic care of cats with Pandora syndrome requires effective communication with the client because**
   a. Clients may be frustrated with their cat.
   b. There is a lot of information to be conveyed.
   c. The client needs to do most of the work.
   d. Setbacks happen.
   e. All of the above

8. **Drug therapy for Pandora syndrome**
   a. Does not exist
   b. Depends on the cat's individual manifestations
   c. Is mostly extralabel
   d. Includes maropitant citrate
   e. B and C only

9. **The most effective approach with regard to treatment of Pandora syndrome seems to be**
   a. Early diagnosis
   b. Diet therapy
   c. Drug therapy
   d. Behavioral therapy
   e. Weight reduction

10. **Multimodal environmental modification (MEMO) is indicated for**
    a. All cats
    b. Only cats with Pandora syndrome
    c. Only cats with the chronic lower urinary tract signs consistent with Pandora syndrome
    d. Only obese cats
    e. No cats