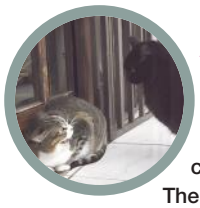
Check for updates

Journal of Feline Medicine and Surgery (2024) **26**, 1–30

PRACTICE GUIDELINES

2024 AAFP intercat tension guidelines: recognition, prevention and management



Abstract: Social tension or conflict between household cats is common but, because it often manifests as subtle behavioral changes, it can go unnoticed; it is precisely because most signs are subtle and unrecognized that the term 'tension' is used. Where associated tension-related chronic fear–anxiety leads to more overt behavioral concerns and stress-associated disease, cats may face relinquishment by caregivers or even euthanasia if the tension is not relieved. The '2024 AAFP intercat tension guidelines: recognition, prevention and management' have been authored by a Task Force of board-certified veterinary and applied behaviorists and clinical experts in feline medicine and behavior convened by the American Association of Feline Practitioners. The aim is to support veterinary professionals in understanding social behavior between cats and, more specifically, in recognizing intercat tension, preventing or minimizing its occurrence and managing the stressors. In developing the Guidelines, the Task Force has modified the five pillars of a healthy feline environment to provide a framework to assist the prevention or management of intercat tension in households with two or more cats. Because feline social behavior is often misunderstood, the Guidelines debunk 10 common myths that have the potential to negatively impact the wellbeing of companion cats. Extensively illustrated with visual examples of intercat tension and an Appendix detailing a number of case studies, the Guidelines also include a comprehensive table of psychotherapeutic medications, and a detailed algorithm that outlines a systematic approach to preventing, recognizing and resolving intercat tension. A step-by-step approach to introducing a new cat into a household with one or more resident cats is included to further support veterinarians, and a range of management tools to promote client education accompany the Guidelines.

Keywords: Behavior modification; five pillars; body language; multi-cat; feline synthetic pheromones; fear–anxiety; frustration; agonistic behavior; social group; social bond

Ilona Rodan
DVM, DABVP (Feline)*
Co-Chair
Cat Behavior Solutions, Madison, WI, USA

Daniela Ramos
MV, MSc, PhD, Diplomate (Cleve-CVLBAMC)*
Co-Chair
PSICOVET Veterinary Behavior Medicine, São Paulo, Brazil

Hazel Carney
DVM, MS, DABVP (Canine/Feline)
Feline Behavior Medicine at Gem Veterinary Center, Emmett, ID, USA

Theresa DePorter
BSc, DVM, MRCVS, DECAWBM, DACVB, MRCVS
Oakland Veterinary Referral Services, Bloomfield Hills, MI, USA

Debra F Horwitz
DVM, DACVB
Veterinary Behavior Consultations, Creve Coeur, MO, USA

Daniel Mills
BVSc, PhD, CBiol, FRSB, FHEA, CCAB, Dip ECAWBM(BM), FRCVS
Department of Life Sciences, College of Health and Science, University of Lincoln, Lincoln, UK

Kristyn Vitale
MEn, PhD, CAAB
Unity Environmental University, New Gloucester, ME, USA

*Corresponding authors:
catbehaviorsolutions@gmail.com
daniela.ramos@psicovet.com.br

Introduction

Intercat tension is a common, but often unrecognized, cause of impaired feline health and wellbeing. Globally, surveys indicate that intercat tension affects between 62.2% and 87.7% of multiple-cat (multi-cat) households – that is, households with two or more cats;[1,2] 25–31% of feline behavior cases in a behavior practice are due to intercat tension or conflict.[3–5] Other behavioral concerns and stress-associated disease often occur secondarily to intercat tension. In a recent and large survey of feline relationships, 87.7% of 2492 multi-cat households reported signs of intercat tension.[2] In this survey, 73.3% of respondents noted that signs of tension started with the introduction of a new cat, 23.6% reported gradual changes to a previously positive relationship and 3.1% saw abrupt behavior changes. As the majority of cases of intercat tension begin at initial introduction of a new cat, the Guidelines address best adoption choices, preparation of the home environment, including the availability of safe places for each cat,[2,6] and the gradual introduction process necessary to prevent intercat conflict.

Tension in intercat relationships, within the context of these Guidelines, is characterized by poor tolerance of other cats and lack of friendly interactions by at least one cat in the household toward another cat or cats. Cases of intercat tension are often multifactorial, and problem resolution may involve several treatment pathways. Signs can be subtle, such as staring or blocking, and go unrecognized by caregivers, or may be much more overt, with repeated episodes of physical conflict (eg, hissing, wailing, swatting). The Guidelines

DOI: 10.1177/1098612X241263465
© The Author(s) 2024

CONTENTS page

- Introduction 1
- Terms and definitions 3
- Understanding feline social behavior 2
  - Myth 1: Cats are solitary creatures 2
  - Myth 2: Cats' social organization is based on hierarchy and dominance 4
  - Myth 3: Cats cannot be trained 4
  - Myth 4: Cats have not been domesticated 4
  - Myth 5: Cats do not benefit from social interaction or form bonds 5
  - Myth 6: Cats in a social group need to be treated equally 5
  - Myth 7: Cats who appear to be fighting have a broken relationship 5
  - Myth 8: Cats cannot be socialized as adults or outside of the socialization period 6
  - Myth 9: Cats can be bad, spiteful or have an agenda 6
  - Myth 10: Cats get lonely and need a companion 6
- Five pillars of a healthy multi-cat environment 6
  - Pillar 1: Providing safe places 6
  - Pillar 2: Providing multiple and separated key environmental resources 8
  - Pillar 3: Providing opportunity for play and predatory behavior 10
  - Pillar 4: Providing positive, consistent and predictable human–cat social interaction 10
  - Pillar 5: Providing an environment that respects the cat's sense of smell and other senses 11
  - Impact of intercat tension on the five pillars 11
- Recognizing tension in intercat relationships 11
  - Is it play or fighting? 13
  - Signs of a good cat–cat relationship 13
  - Is it medical, behavioral or both? 14
- Prevention of tension in intercat relationships 15
  - Maximizing harmony in a multi-cat home: getting the environment right 15
  - Caregiver techniques to prevent and defuse tension 15
  - Introducing a new cat into the home 15
- General principles for managing tension in intercat relationships 17
- Management of specific situations involving intercat tension 18
  - Intercat tension within households 18
  - Intercat tension involving outdoor cats 23
- Algorithm for the assessment and management of intercat tension 23–26
- Supplementary material 26
- Summary points 27
- References 27
- Appendix: cat cases 29–30



CAT CASES

Three case studies illustrating intercat tension – how it presented and how it was managed – are included in an Appendix on pages 29–30 of the Guidelines. These have been provided by Daniela Ramos, Co-Chair of the Guidelines Task Force.

By systematically addressing cases of intercat tension using the recommendations outlined by the Guidelines Task Force, veterinary professionals can offer practical advice for improvement or full resolution.

provide detailed descriptions of various presentations of intercat tension that will become recognizable with experience by both veterinary professionals and caregivers.

Caregivers who have two or more cats living on the same premises assume an extra burden of responsibility for the wellbeing of their companion animals, and may face demands on their patience, resources and understanding beyond those that single-cat caregivers encounter.[7] For the veterinarian who serves this growing multi-cat caregiver population, regular client education is an especially important component of the veterinarian–client–patient relationship. Veterinary professionals who knowledgeably advise their multi-cat caregivers and set reasonable expectations will help to ensure that relinquishment or rehoming of companion animals is not the default option for resolving intercat tension. By systematically addressing cases of intercat tension using the recommendations outlined by the Guidelines Task Force, veterinary professionals can offer practical advice for improvement or full resolution. Even seemingly intractable intercat conflict can usually be successfully managed or improved, as evidenced by the case studies included in the Appendix. As with any optimum clinical service model, the Guidelines' recommendations are most effective when they are understood and implemented by the entire veterinary team.

Understanding feline social behavior

Cats are ubiquitous in the lives of humans and yet are still poorly understood. As new research emerges, it is important to address commonly held beliefs that are not well supported by the scientific literature and have the potential to negatively impact feline welfare.

Ten common feline behavior myths are examined and dispelled below. Focusing on the needs of the individual cat, and not on myths and generalities associated with feline behavior, will help to optimize the welfare of cats under our care.

Myth 1: Cats are solitary creatures

Domestic cats have flexible and varied social systems. Social bonds between cats are not necessarily essential,[8] and although cats may form close attachments with other cats, they are not dependent on those relationships to survive (ie, they are 'socially flexible' rather than 'socially obligate').[9,10] The social behavior of cats is influenced by their environment

Terms and definitions

Feline emotions

Understanding of intercat tension has evolved into a science-based specialty, and so it is important that veterinary professionals consistently use precise and accurate terminology in their discussions on this topic, both with colleagues within the profession and with caregivers. Subjective terms such as 'aggressor', 'bully', 'victim' and 'aggression' should be avoided. The goal of these Guidelines is to use terms that aid understanding of the causes and emotions (affective states) underlying the tensions, and to define the cat's behavioral changes as responses to those emotions.

Detailed information about feline emotions can be found in the '2022 AAFP/ISFM Cat Friendly Veterinary Interaction Guidelines: Approach and Handling Techniques', available at catvets.com/interactions.[11] For the purpose of the present Guidelines, a brief summary of feline emotions – based on a combination of the work of Jaak Panksepp (Affective Neuroscience[12]), Daniel Mills (psychobiological approach[13]) and Sarah Heath (Heath Model approach to emotional health[14]) – follows.

Intercat relationships can involve engaging (positive) and protective (negative) emotions, both of which are designed to aid the individual cat's survival. The engaging emotions addressed within these Guidelines are desire-seeking and social play. Desire-seeking leads to searching for food, water and comfort, and the display of other desirable behaviors, including object play. Social play relates to play that occurs between cats with an acceptable degree of reciprocity.[15] Although common in younger cats, social play declines with age or compromised physical health. Some cats have higher play drives than others, which can lead to tension between cats.

The protective emotions seen in intercat tension are fear–anxiety and pain, and the behavioral responses to those emotions are:

- **Inhibition** (observed behaviors include tense muscles, crouching and/or freezing);
- **Avoidance** (behaviors range from passive eye avoidance and hiding to escape); and
- **Repelling behaviors** (ranging from a low growl to hissing and biting), which aim to increase distance from another cat or cats.

Frustration increases the intensity of another emotion – whether an engaging or protective emotion – and can result in more intense behavioral responses.

Definitions for terms commonly used in the context of feline behavior, including intercat tension

Multi-cat	Refers to households with two or more companion cats
Affiliative	Refers to friendly interactions between two or more cats
Agonistic	Refers to unfriendly interactions between two or more cats
Toleration	When cats living together demonstrate neither affiliative nor agonistic behavior toward each other. This may involve time-sharing; one cat may, for example, sleep on a bed during the day and another cat sleep on the same bed at night
Allogrooming	Social grooming between cats that is focused primarily around the head and neck, and increases the social bond
Allorubbing	Cats rubbing up against one another, bunting (head-butting or face-rubbing) or intertwining their bodies
Intercat tension	Broad term for all agonistic behaviors, whether subtle or more obvious in nature
Intercat conflict	More obvious signs of agonistic behaviors
Group sessions	Reintegration sessions performed with resident cats experiencing tension but who are not separated during management
Reintegration	Broad term for the process of decreasing tension while improving cohabitation between resident cats
Reintroduction	Process used to reunite resident cats who have been separated (eg, veterinary visit, due to tension and/or conflict)
Reward-based training	Teaching cats desired behaviors by utilizing preferred items and pleasant experiences (eg, treats, desirable human attention)
Discipline-based training	Teaching cats desired behaviors by utilizing fear-provoking stimuli (spraying water, yelling at the cat) or physical punishment (smacking or kicking the cat)
Reward-based training is always recommended over discipline-based training for achieving desirable feline behaviors, as it also promotes feline welfare and prevents fear of people and the breakdown of the human–animal bond. It might be used, for example, to create familiarity with the use of a cat carrier or a harness and leash prior to introducing a new cat to a resident cat	
Social bond	A psychological tie that binds two or more individual cats together, as evidenced by the mutual display of affiliative behaviors
Social group	A group of cats that is characterized by definable and recognizable social bonds
Social relationship	A sustained association between two or more cats that may be characterized variously by affiliative, tolerant or agonistic behaviors

and individual genetics.[16] Additionally, early developmental experiences, ongoing life experiences and learning influence behavioral tendencies. Thus, not only is feline social behavior highly individualized (some cats seek out social interaction more than others, some prefer to live alone, and some as part of a social group), caution should be applied when translating information about the social organization of cats from populations living in different circumstances.[17] Free-ranging (feral or street/community) cats differ from companion cats (living within homes) in several ways. Free-ranging cats are more likely to be unneutered and may have a more unpredictable food supply. Among free-ranging cats, social groups are often made up of related individuals, or other individuals chosen by the cat. Free-ranging cats also have control over whether to leave an undesirable social situation, whereas companion cats (especially indoor-only cats) do not.

Because household groupings of cats are chosen by their caregivers, some multi-cat homes may not contain true social groups of bonded individuals, but rather cohabitees, resulting in more intercat tension. Caregivers may also negatively impact cat behavior by increasing the number of cats in a limited space. However, research indicates that some companion cats may be able to live together at higher densities with relatively little intercat tension, depending on the physical and social environment.[18] 'Social maps' help to identify the affiliative and agonistic relationships between cats and the intensity of any tensions (Figure 1). The 'Questionnaire for multiple-cat households' (see supplementary material) is also designed to assess affiliative and agonistic behaviors.

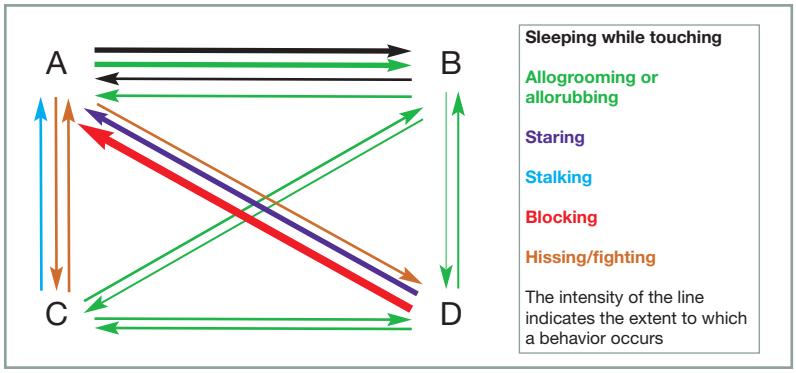


Figure 1 **A 'social map' can help in developing a plan to resolve intercat tension and any concurrent behavioral concerns. This example shows a social map for a four-cat household. Cat A was a 6-year-old spayed female presenting with urine soiling. Examination and diagnostics (urinalysis, urine culture, urinary tract ultrasound, complete blood count and chemistry profile) revealed no physical abnormalities. Review of the caregiver's completed 'Questionnaire for multiple-cat households' (see supplementary material) identified that intercat tension was occurring. Although cat A greatly enjoyed the company of cat B, agonistic behaviors toward cat A by cats C and D occurred. Cat D engaged in frequent staring and blocking behavior toward cat A; often this behavior occurred in hallways and on stairways and prevented cat A from accessing rooms with litter boxes. Cat C intermittently stalked and hissed at or fought with cat A. The veterinarian recommended a safe room be set up with all resources for cat A (which only she could access), and a microchip-activated cat flap that only she could enter. This resolved both the urine soiling and intercat tension.** *Figure courtesy of Ilona Rodan*

Myth 2: Cats' social organization is based on hierarchy and dominance

Feline social groups are organized based on several factors including familiarity, age and affiliations. Social hierarchies have been described in feral cats and are defined on the basis of who predictably takes precedence over whom, but they are not rigid. They are not the basis of social organization, but a consequence of it. There is often confusion surrounding use of the term 'dominance' in cats, with cats labeled as 'dominant' often simply being more active, extrovert or inquisitive than those labeled as 'submissive'. There is no evidence that intercat tension occurs because cats are striving to establish a dominance hierarchy. More typically, intercat tension within a home occurs because there is competition over resources, or stimuli that threaten the social relationships within the group (eg, introduction of a new cat, territorial invasion by an outdoor neighborhood or feral cat, pain or sickness).

Among free-ranging cats, social groups are often made up of related individuals, or other individuals chosen by the cat. In contrast, household groupings of cats are chosen by their caregivers.

Veterinary professionals should educate caregivers not to let cats 'work it out themselves' or try to force cats to get along. Instead, caregivers should consider their cats' environment and whether the current availability and distribution of resources is creating tension (see 'Five pillars of a healthy multi-cat environment').

Myth 3: Cats cannot be trained

Learning processes are universal, and cats are no exception. Every cat will learn at their own rate. To facilitate training, caregivers must identify rewards that their cat prefers. Although food is a commonly used training reward, other rewards such as play, petting and praise can also reinforce desired behavior. In a study that examined the preferences of 38 cats, 50% preferred a social reward such as petting or play, while 37% preferred food.[19] Once preferred rewards have been identified, the caregiver should start by conducting brief training sessions with the cat and slowly work up to longer sessions. Ideally, sessions should terminate before the cat loses interest. More information on training is provided in a handout, 'Behavior modification recommendations for multiple-cat households', available in the supplementary material.

Myth 4: Cats have not been domesticated

Cats have undergone changes through the domestication process and display a number of adaptations to life with humans. As well as changes in the genome of domestic cats compared with their wild cat ancestors,[20] there are both physical changes (eg, smaller body size and different coat colorations) and behavioral changes (eg, increased docility and affiliative behavior toward humans).

Myth 5: Cats do not benefit from social interaction or form bonds

Social interactions can be enriching for some cats. Many cats prefer human social interaction to other types of potential reward.[19] Cats have the capacity to be highly sociable with humans and other cats,[17,21] and can form close bonds concurrently with other cats and humans.[8,22] Positive, consistent and predictable human social interaction is important to a cat's welfare (see 'Pillar 4: Providing positive, consistent and predictable human–cat social interaction').

Myth 6: Cats in a social group need to be treated equally

All cats in a social group should have their needs met, but all cats do not have the same needs. Some cats in the home require more care and attention than others. One cat may, for example, have special medical considerations that require more of the caregiver's time and attention. Additionally, not all cats have the same activity levels or preferences.[19] One cat may prefer playing and another cat may prefer being petted. Caregivers should assess the individual needs and preferences of each cat to ensure good welfare for all.

All cats in a social group should have their needs met, but all cats do not have the same needs.



Myth 7: Cats who appear to be fighting have a broken relationship

'Rough-and-tumble' play can look quite serious, but is still play. Cats may also use overt expressions (eg, hiss and non-reciprocated chasing) to end a social encounter without a risk of harm.[23] In addition, it is not unusual for companion cats to occasionally have short episodes of 'not getting along'. This is normal social behavior and does not mean the bond between them is broken or dysfunctional. If these episodes are accompanied by frequent, intense or prolonged physical conflict and/or hiding by one or more of the cats, an underlying medical problem should be ruled out and behavioral support provided. See Figure 2 and 'Is it play or fighting?' for guidance on how to differentiate play from intercat tension.

Cat-to-cat play



A tabby cat grooms a housemate – Play bouts often begin with the pair engaging in affiliative behavior, such as allogrooming or sitting together.



The interaction shifts to the floor, and the housemate black cat now grooms the tabby – During rough-and-tumble play, both cats may be seen laying on their sides and mouthing one another, with their bodies wrapped around each other.



The cats are up from the ground, with one cat chasing the other – Behaviors such as chasing may occur and reinitiate play. Both cats should be seen taking the initiative. If one cat is consistently attempting to hide while another consistenty chases them, this is a sign of imbalance in the relationship that will lead to intercat tension and potentially serious behavior and/or welfare problems.



The cats re-establish a bout of wrestling – Although rough-and-tumble play can look serious, involving behaviors such as raking (cat vigorously kicks hindlegs against another cat), cuffing (cat hitting another cat with their paw) or biting, these interactions should not be mistaken for repelling behaviors. During play, these behaviors will be restrained and not performed to the full extent; for example, raking does not cause fur to go flying, claws are not extended during cuffing, and bites do not break the skin.



Note the black cat's flattened ears – During play, some signs of tension may occur (eg, flattened ears or lip-licking) as the cats work out how to deal with the challenges and learning opportunities provided within play. It should also be noted whether the cats are distracted as they interact (ie, attention is paid to the environment, outside of the social partner). This may further indicate that the cats do not view this interaction as a threatening situation.



A pause in the bout of play – During play, frequent short pauses in the interaction are common. In contrast, during agonistic interactions, pauses tend to be more prolonged and vocalizations, such as growling and hissing, may occur at this time. The cats will now variously reinitiate play, engage in further affiliative behavior or go their separate ways.

Figure 2 Recognizing cat-to-cat play in the home environment. *Images courtesy of Kristyn Vitale*

Myth 8: Cats cannot be socialized as adults or outside of the socialization period

The socialization period of kittens represents the time when they are most sensitive to learning about social behavior and relationships. This occurs around 2–9 weeks of age,[24,25] but learning does not stop when this period ends. In one study, 50 kittens aged 3–8 months old participated in a training and socialization class.[8] In total, 86% of the kittens completed the 1-day-a-week, 6-week long program, with many readily learning new behaviors and becoming comfortable in novel environments.

It is important to recognize the potential for successful training and socialization outside of the socialization period and not to subscribe to the myth that cats are socially aloof, with behavioral tendencies fixed from a young age. Additional socialization, when performed correctly, has the potential to improve feline welfare by creating well socialized, less fearful cats with healthy coping behaviors. However, it is important also to recognize that cats who come from a feral or street cat background will have genetic and epigenetic factors that may limit their socialization to people and new situations; so, before recommending a socialization program, there should be careful discussion with the caregiver about the cat's background. Additionally, if a cat displays continued fear–anxiety during slow and gradual training and socialization sessions, that individual cat may need to be removed from the sessions.

Myth 9: Cats can be bad, spiteful or have an agenda

The brains of cats are adapted to think in the moment, not for forward planning over long time scales. Myriad stressors, both internal (eg, a decrease in sensory capacities in senior cats) and external (eg, changes in the physical or social environment), may cause fear–anxiety or frustration. The resulting behavior is an expression of the emotions that are triggered by the immediate situation, not by the person who has brought the situation about. For example, a caregiver may feel their cat is urinating on the bed out of spite. However, better explanations – not based on anthropomorphism – may be that the cat has a medical condition, or access to a litter box is blocked by another cat, or the litter type or box design is not to the cat's liking. The 'AAFP and ISFM Guidelines for Diagnosing and Solving House-Soiling Behavior in Cats' discuss other causes and identify solutions.[26]

Myth 10: Cats get lonely and need a companion

Cats do not necessarily need companionship. Caregivers should carefully consider the pros and cons of acquiring a new cat as a companion for another cat. First, it is not always necessary to replace a cat that has passed away, as companion cats may be mourning the loss of a bonded companion or stressed due to the change in the social environment.[27] Secondly, having more than one cat in the house may or may not enhance the welfare of a cat (see 'Five pillars of a healthy multi-cat environment'). Caregivers should consider that while some cats may be stressed from living without other cats, more commonly cats living with other cats they are not socially bonded with, and who do not tolerate one another, will experience distress (ie, when the impact of the protective emotions of fear–anxiety and/or pain exceed the cat's coping ability).

Having more than one cat in the house may or may not enhance the welfare of a cat.

Five pillars of a healthy multi-cat environment

Having more than one cat in the home may or may not enhance the welfare of the cats. The number of resources per cat, including food stations, litter boxes and opportunities for interactive play with caregivers, often decline in multi-cat households when compared with single-cat households, increasing the risk of territorial and social conflict.[28] The original five pillars of a healthy feline environment, introduced in the 'AAFP and ISFM Feline Environmental Needs Guidelines',[29] are adapted here for multi-cat households, with and without tension (see Box 1). Supporting the pillars is more challenging in the case of indoor-only cats vs cats with outdoor access, whether part- or full-time.[6,30,31] The space limitations inherent in indoor environments are more likely to lead to intercat tension (because of the smaller physical environment). It is important that every effort is made to meet the five pillars of a healthy environment to prevent intercat tension from developing in the first place.

Pillar 1: Providing safe places

A newly introduced cat may encroach on the space of an existing resident cat or cats,

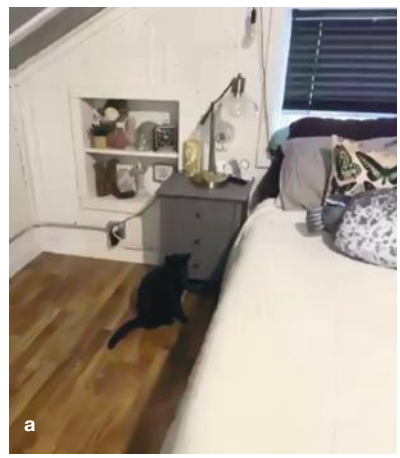




Figure 3 **Two cats were brought into a household that already had two resident cats. One of the new cats integrated well and one did not. (a) Despite ensuring a gradual introduction, one of the resident cats, a black male, would stare at and block one of the newcomer cats, a tortoiseshell, who would hide from him under the bed. (b) Increasing safe places within the home, including safe hiding places, increased the tortiseshell cat's confidence to come out from under the bed. From her high-sided cat bed raised up on a window ledge, she can now monitor her environment and has at least two points for exit and entry, allowing escape from the black cat.** *Images courtesy of Carrie Mesiar*

Box 1

Essential environmental needs for multi-cat households

Pillar 1

Provide safe places for each cat to prevent competition for resources. Identify each cat's favored height (ie, floor level or raised up on furniture) for beds and perches.

Pillar 2

Provide multiple and separated key environmental resources – food, water, safe resting areas and litter boxes, with visual barriers and distance between each. For example, cats should be fed in separate locations out of sight of one another, even if they are members of the same social group. Food should be positioned away from water and litter boxes. Ensure resources are out of view of outdoor cats.

Pillar 3

Provide opportunity for play and predatory behavior. Play may be individualized or conducted within social groups. Extra sessions with all cats may be appropriate, depending on each cat's play drive. Management of feeding (eg, each cat eating in a separate location regardless of their social group) is an important component of predatory (hunting) behavior.

Pillar 4

Provide positive, consistent and predictable human–cat social interaction, individualized (eg, type and duration of interaction) based on each cat and feline social groups (see Video 1 in the supplementary material). Learn to interpret and monitor feline body language (see Video 2 in the supplementary material).

Pillar 5

Provide an environment that respects the feline senses (smell including pheromones, hearing, sight and touch). Use synthetic feline pheromones when introducing cats or if intercat tension arises (see Box 5).

necessitating additional safe locations for the newcomer that the resident cat(s) cannot readily access.

Considerations and recommendations

- Every cat needs safe places – in general, with one safe place per cat plus one additional place – to allow choice and prevent competition. This is important in enhancing a sense of control and security.[29]
- In a study of 60 pairs of neutered, indoor-only cats, cats spent 48–50% of their time out of each other's sight.[32]
- Safe places with high sides allow cats to hide, providing visual barriers from cats not in their social group (Figure 3). Hiding options that allow entry and exit from two different paths prevent blocking by another cat.[33–37]
- Access to vertical places (eg, furniture, cat shelves, cat trees) increases a cat's control over the environment, and provides opportunities for climbing and perching while monitoring the approach of other cats. The aim should be to offer vertical space at different heights, at the cats' preferred levels, with some hiding options for less confident cats (Figures 4 and 5).[37]





Figure 4 **(a,b) This outdoor enclosure has multiple levels for the cats to perch on, as well as offering different hiding options, preventing competition for resources and the risk of agonistic behaviors.** *Images courtesy of Ilona Rodan*

Figure 5 **Intercat tension in this multi-cat household occurred because of competition for vertical space. Following a behavior consultation, the client placed perches along the walls of the lower and upper levels of the home, including above the stairs, leading to toleration between the cats.** *Images courtesy of Rachael Boneck*







Figure 6 Safe outdoor options provide additional space to allow a cat to perform normal behaviors while distancing from other household cats. (a,b) A cat being walked with a harness and leash. (c,d) Outdoor enclosures with screened fencing around the space. *Images courtesy of Alexandre Daniel (a), Debra Horwitz (b), Ilona Rodan (c) and Daniela Ramos (d)*

Access to safe outdoor space can be provided within escape-proof fenced yards and outdoor cat enclosures, or in some circumstances by walking a cat with a harness and leash, following reward-based training, in a safe and quiet location without unfamiliar cats in the area.

- If agonistic behaviors occur, the available safe places with visual separations in the cats' core territories (which may overlap) should be increased.
- Access to safe outdoor space can be provided within escape-proof fenced yards and outdoor cat enclosures, or in some circumstances by walking a cat with a harness and leash, following reward-based training, in a safe and quiet location without unfamiliar cats in the area (Figure 6; see also Video 3 in the supplementary material for advice on training cats to accept a harness). Advise caregivers to follow a routine, regardless of the type of outdoor access. Microchip-activated cat flaps prevent entrance by unfamiliar cats. Schedule safe times to avoid potential conflicts with outdoor neighborhood, stray or feral cats.

Pillar 2: Providing multiple and separated key environmental resources

All key resources (safe places, food, water, litter boxes, scratching surfaces) should be distributed throughout the three components of each cat's physical home environment (home range, territory and core territory for each cat; Figures 7 and 8). More resources are necessary if agonistic behaviors occur (Figure 9).

The space limitations inherent in indoor environments are more likely to lead to intercat tension.

Considerations and recommendations

- Safe places, food, water and opportunities for play should be available in each cat's core territory. Advise clients to separate food and water, and to provide multiple visually separated feeding and water stations (Figure 10).
- Litter boxes and scratching surfaces should be in different locations toward the periphery of the territory on each level of the home.
- Place visual barriers between resources (whether the same or different resources), and block visibility of outdoor cats.
- If there is more than one social group, ensure each social group has its own separate core territory.
- Provide safe outdoor space, if possible.
- Monitor for urine, fecal and scratch marking; these behaviors can indicate distress and inadequate environmental resources.[39,40]

The cat's physical environment

- **Home range** – the entire area over which the cat roams
- **Territory** – the area a cat will actively defend against invasion
- **Core territory** – the area that is sheltered and safe for eating, sleeping, rest or play

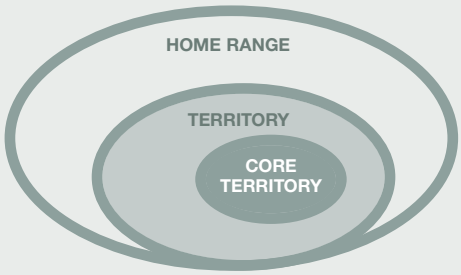


Figure 7 **The three components of a cat's physical environment are the home range, territory and core territory. In a multi-cat household, resources for resting, feeding, sleeping and play should be placed in each cat's core territory. Scratching surfaces and litter boxes should be available in each cat's territory, the area that cat will defend. The home range is the entire area over which a cat roams, and is much smaller for indoor-only cats vs cats with outdoor access.** Adapted from Halls (2016)[38]

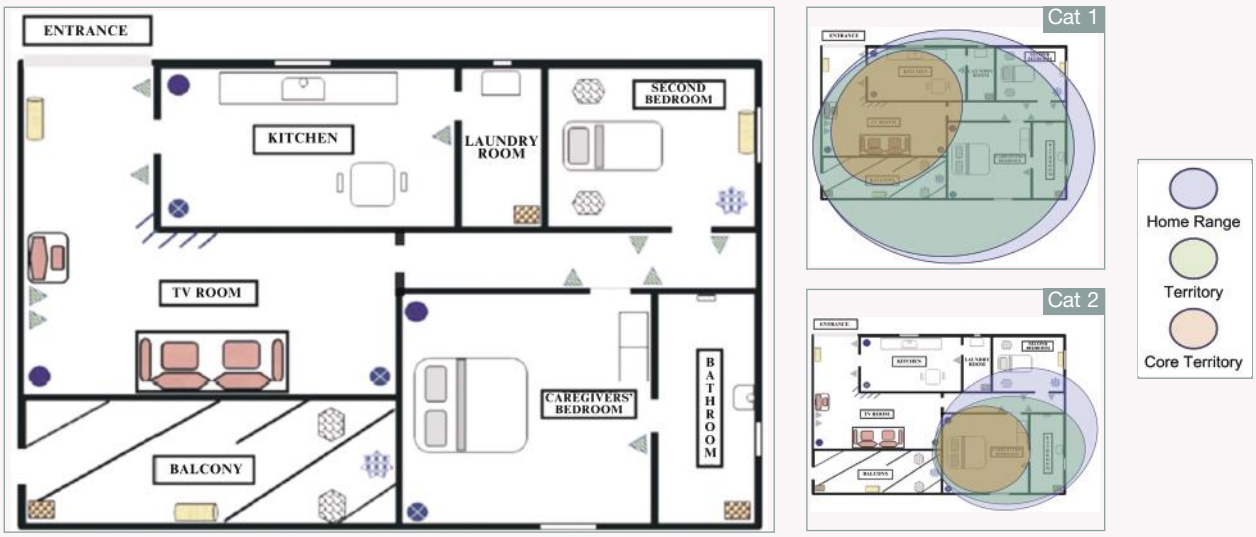


Figure 8 **Diagrammatic representation of a multi-cat household with two resident, non-socially bonded male cats. The configuration of the 690 ft² (64 m²) apartment is illustrated in the main diagram, with the cats' resources shown in the key. Aside from a small balcony, the cats have no access to the outdoors. The home range, territory and core territory of each of the cats are shown in the smaller diagrams. Note that the cats' environments overlap, with cat 1 using the entire household space and cat 2 restricted to the caregivers' bedroom and bathroom. Cat 2 is timid and cat 1 is highly territorial, blocking cat 2's access to the rest of the home. Cat 1 defends a relatively large territory, almost the size of the home range. Compare this with cat 2's much smaller territory, which only slightly exceeds his core territory. The best locations for each cat's safe places, food, water and bed are in their respective core territories, with litter boxes and scratching posts in their respective territories (which do not overlap), to avoid competition over these resources. Ideally, a microchip-activated cat flap would be placed in the door to cat 2's space, preventing cat 1 from imposing on cat 2's territory, core territory and home range. This would help to increase cat 2's confidence to venture out of the room, knowing it is possible to safely return without interacting with cat 1.** *Figure courtesy of Daniela Ramos*

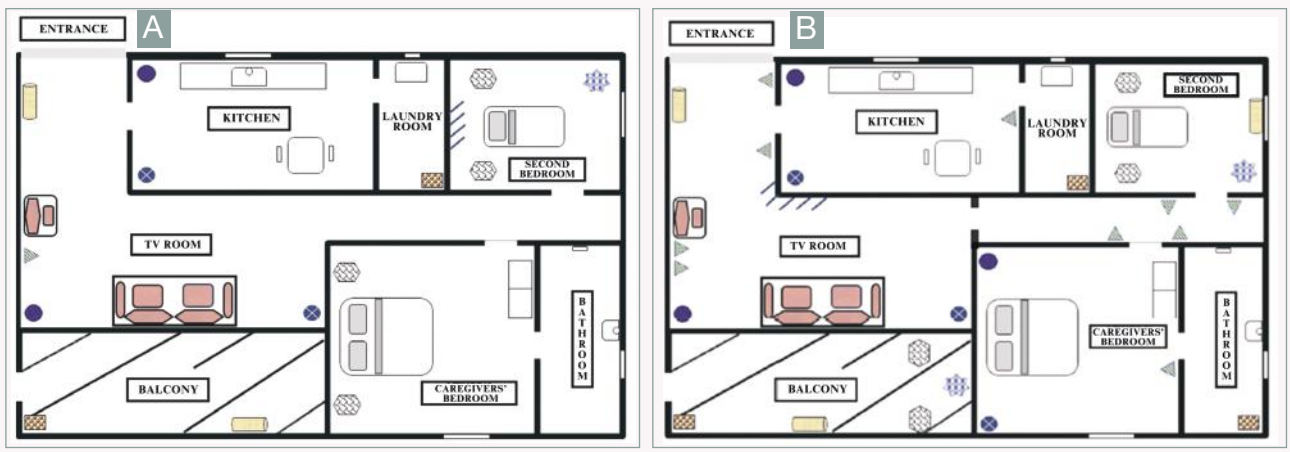


Figure 9 **Diagrams demonstrating how the relationships between resident cats in two multi-cat households have determined both the distribution and number of key resources provided. For key, see Figure 8. (a) Three affiliated cats live in this apartment, with minimal tension. The resources have been separated among different locations to prevent tension, reflecting their core territories in the home environment. (b) Agonistic behaviors between the two cats living within this household (same household as described in Figure 8) required both repositioning of resources and the addition of several more to minimize tension.** *Diagrams reproduced from Ramos (2019)[31]*

Pillar 3: Providing opportunity for play and predatory behavior

Other than queens and kittens, who communally eat together, cats are often solitary hunters and feeders. It is normal feline feeding behavior to eat multiple small meals, and so a cat may not eat all the food provided in one feeding. Puzzle feeders can simulate hunting, allowing a more natural feeding behavior.

Considerations and recommendations

- Distress can occur if cats congregate around food preparation areas (see Figure 11, and Video 4 in the supplementary material) and/or at feeding time. Caregivers rarely recognize the subtle signs of intercat tension at these times.
- Social play between cats diminishes in adulthood, while object play continues to be important throughout life. Enjoyable play opportunities should be available for all cats.[8,24]
- Laser pointers can cause frustration if the cat cannot 'catch' something at the end of play. There is a significant association between the frequency of laser pointer use and abnormal repetitive behaviors in cats.[41]
- Catnip can arouse some cats, resulting in intercat tension. If this occurs, use of catnip toys should be discontinued.
- Introduction of a new cat can result in one cat eating another cat's food or predatory behaviors by one cat toward another. Caregivers should monitor for predatory (hunting) play among the cats and prevent this behavior with sufficient interactive toy play and opportunities for cat self-directed toy play.

Distress can occur if cats congregate around food preparation areas. Caregivers rarely recognize the subtle signs of intercat tension at these times.

Pillar 4: Providing positive, consistent and predictable human–cat social interaction

Many cats prefer human social interaction over other positive stimuli, including food.[19] The preference tends to be for short and frequent human interactions, though longer if the cat initiates the interaction themselves.[42] Interactions should be enacted in a way that provides choice and control for all cats, and considers individual preferences. The introduction of a new cat can disrupt existing human–cat interactions.

Considerations and recommendations

- Educate clients about feline preferences, how to perform healthy interactions with cats and how to monitor their body language (see Videos 1 and 2 in the supplementary material).
- In terms of social interactions, it is important not to seek to treat all cats equally (see 'Myth 6').
- Interactive play (eg, using a wand toy) may be with individuals, a social group or the entire group, dependent on the cats' preferences.
- Educate clients to avoid discipline-based training, whether verbal or physical. Actions such as throwing an object at the cat or spraying them with a squirt gun often increase fear–anxiety and risk damaging the human–cat bond. Instead, reward-based training should be used to achieve a long-term desired feline behavior change (see the 'Behavior modification recommendations for multiple-cat households' handout in the supplementary material).
- Warn clients never to physically interact with cats who display high levels of emotional arousal or distance-increasing behaviors (eg, avoidance such as cowering, or repelling behaviors such as hissing), as injury is likely.



Figure 10 **Even affiliated cats should be separated during feeding to prevent competition for food. (a) If the home set-up does not permit physical separation, or if cats do not eat if put in separate rooms, a visual barrier is sufficient; this may be as simple as an upturned cardboard box. (b) A microchip-activated feeder is another way to separate feeding of cats.** *Images courtesy of Ilona Rodan (a) and Debra Horwitz (b)*



Figure 11 **Cats gathering before mealtimes may pose challenges for individuals who would prefer to avoid each other.** *Image courtesy of Theresa DePorter*

Pillar 5: Providing an environment that respects the cat's sense of smell and other senses

Novel sensory stimuli, whether associated with the introduction of a new cat or, for example, a cat returning home after a veterinary visit, can be stressful for the resident cat(s).

Considerations and recommendations

- Provide desirable sensory stimuli and avoid undesirable stimuli (smells, noises or sights) that can cause fear–anxiety or frustration.
- Synthetic feline pheromones (see Box 5) may improve the cats' emotional state, though signs of improvement may be subtle and can easily be overridden by responses to perceived danger. Where possible, check whether a product that claims to have pheromonal activity actually contains feline pheromone analogs.

Impact of intercat tension on the five pillars

Intercat tension can impact each of the five pillars, and veterinary professionals should be proactive to avoid potentially unfavorable outcomes (see Box 2).

Box 2

Impact of intercat tension on the five pillars

Intercat tension may arise as a result of introduction of a new cat or changes to an existing cat–cat relationship

Pillar 1: Safe places

- Introduction of a new cat may cause stress around the personal space of the resident cat(s).
- Resident cats may compete for available safe places, particularly if insufficient or difficult to access.

Pillar 2: Multiple and separated key environmental resources

- Introduction of a new cat can create competition for current resources.
- A resident cat's access to current resources may be limited by another resident cat's staring, blocking, stalking or cornering behavior.

Pillar 3: Play and predatory behavior

- Introduction of a new cat can disrupt social play balances and lead to undesired patterns of play (eg, predatory play by one cat toward another cat).

Pillar 4: Positive, consistent and predictable human–cat social interaction

- Human attention is an important resource. Introduction of a new cat can disrupt the current social interactions between caregiver and resident cat(s).
- Competition and tension between cats may lead to changes in caregiver behavior that are inconsistent from the cats' perspective.

Pillar 5: Environment that respects the cat's senses

- Novel sensory stimuli (ie, smells or noises) introduced with a new cat or a resident cat returning home after a veterinary visit may result in fear–anxiety and/or frustration among the resident cats.

Staring, walking away, hiding and blocking are the most common signs of intercat tension. Recognizing these more subtle signs is equally as important as the overt signs, as they too can significantly impact feline emotional health and welfare.

Recognizing tension in intercat relationships

Social tension between cats may manifest as repelling behaviors (eg, hissing, striking), but most commonly cats show inhibition of normal behaviors (eg, inappetence, inactivity, disturbed sleep, lack of elimination) or avoidance (eg, hiding). While growling, swatting, chasing and even direct physical conflict are other very overt signs of social tension, the more subtle signs equally need to be recognized, and include staring, walking away, hiding and blocking.[2] A US survey-based study determined that staring was most frequently displayed (see box 'Signs of intercat tension'). Displacement behaviors such as overgrooming may also be manifestations of social tension, as may marking behaviors (eg, scratching furniture or carpet, urine marking) and/or changes in toileting habits.

Even when social tension is subtle and difficult to identify, there may still be an important impact on feline emotional health and welfare; cats may suffer from distress (ie, when the impact of the protective emotions – fear–anxiety, and/or pain – exceed the cat's coping ability) or stress-associated disease, and may face discipline-based training, relinquishment or even euthanasia if the tension is not relieved. Potentially there may be a negative effect on the wellbeing of all cats in the household.

When conflict arises, social species, such as dogs, horses and people, have the skill set to 'appease' and 'reconcile' to resolve differences. Cats have fewer reconciliation behaviors and do not appear generally to offer gestures to other cats to resolve intercat tension. Thus, cats can become fixated and a stand-off can develop, with neither cat having the skills to resolve the problem. Cats' primary means of addressing conflict is, as discussed, through inhibition, avoidance or repelling behaviors. It is precisely because cats have such complex interactions and relationships, which are difficult to mend once broken, that identifying signs of tension early is so important.

Encounters that happen once do not necessarily reflect an ongoing problem – cats'

How tension may be displayed

Cats communicate through body language. Where there are tensions, flattened ears, a crouched body posture and low head carriage or a swishing tail may be observed, among other signs (see 'Reading body language: social tension and conflict' [Figures 12–16] and Videos 5 and 6 in the supplementary material). Repelling behaviors can vary from growling to hissing or screaming in an attempt by the cat to defend themselves. Alternatively, cats may simply avoid cats they dislike. A cat who avoids going to the litter box or does not eat at mealtimes may appear sick when, in reality, they are either trying to avoid conflict or their access is being blocked by another cat, particularly if there are insufficient or poorly placed resources in the home.

Overt displays of social tension may include growling, hissing, screaming, spitting, attacking, chasing, biting and, in some cases, direct physical conflict.[43] Sometimes caregivers just find tufts of hair as evidence of social tension. Passive displays include staring, blocking (sitting in hallways, near steps or in other narrow passageways so that no other cat can pass) and hiding. Some cats choose to run away or spend more time outside in order to avoid conflict.

Any signs of tension should be promptly assessed and monitored.

Reading body language: social tension and conflict



Figure 12 **Hissing is self-protective and may be accompanied by a fixated gaze, tense body posture and flattened ears.** *Image courtesy of Theresa DePorter*



Figure 13 **This cat is displaying an arched back, fixated gaze, tense body and piloerection, and is extending their hindlimbs to appear taller in a 'halloween pose'.** *Image courtesy of Theresa DePorter*



Figure 14 **This cat has dilated pupils, a tense body and fixated stare, with ears flattened and rotated outwards.** *Image courtesy of Theresa DePorter*



Figure 15 **A tense emotional state in this cat is characterized by a tense body, slight piloerection, oblong-shaped pupils and a crouched posture. Ears are flattened and rotated outwards and legs are tucked into the body.** *Image courtesy of Ilona Rodan*

Signs of intercat tension

In decreasing order of frequency:

- Staring (44.9% of cases)
- Chasing
- Stalking
- Fleeing
- Tail twitching
- Hissing
- Wailing or screaming

From Elzerman et al (2020)[2]

VIDEOS

Videos showing tension and conflict between resident cats are available in the supplementary material.











Figure 16 **Intercat tension involving direct conflict between two cats in a multi-cat household. Agonistic behaviors from the black cat toward the tabby cat were a daily occurrence, though physical conflict was uncommon. (a) The tabby adopts a cowering posture while the black cat leans over him with a fixated stare. (b) The tabby displays repelling (hissing) behavior, with a tense body posture and flattened ears. (c) Direct conflict ensues, with the tabby showing more intense repelling behaviors (swiping and hissing); note the rotated ears of the black cat. (d) In a separate encounter between the cats, the tabby freezes while leaning away tensely with ears rotated sideways; the black cat is staring at him, with ears forward. (e) While still under the watchful eye of the black cat (not shown), the tabby turns and slowly retreats, adopting a crouched position.** *Images courtesy of Daniela Ramos*

interactions need to be observed over time (see box 'How tension may be displayed'). Some priorities for assessment and client education are distinguishing between play and fighting behaviors, understanding what a good feline affiliative relationship looks like, and the interplay between behavioral and medical problems. These aspects are discussed below. Various publications on feline behavior recognition are available in the References.[2,43–47]

Is it play or fighting?

Interpreting feline behaviors with the aim of understanding relationships between household cats can be challenging, particularly when questioning whether cats are mutually rough-and-tumble playing (affiliative behavior) or fighting (agonistic behavior requiring intervention). Behaviors such as chasing, wrestling and mouthing can be present in both scenarios and it is not uncommon for caregivers to seek veterinary advice to differentiate between the two. Requesting pictures and videos from caregivers to review will help in making the distinction.

Question clients about both overt and subtle behaviors to identify affiliative, agonistic and/or toleration behaviors between cats during their other daily interactions. Consider emotions as well as motivations when interpreting if cats are playing or fighting.[15,19] A recent study identified an 'intermediate' category between social play and agonism, describing it as more closely associated with play and less with agonistic behaviors.[23] If cats are wrestling without vocalizing, they are most likely playing (see Video 7 in the supplementary material).[23] If they are chasing, especially if not mutual, and vocalizing with recurrent bouts of inactivity and less extended direct contact, they are most likely not playing; rather, one cat is treating the other as if they are a play object or something to practice predatory skills on.[23] Cats who fight are unlikely to reliably demonstrate affiliative behaviors between themselves at other times.

Often, caregivers will describe their cats as being 'good friends', but deeper investigation will reveal they have misjudged the cats' relationship and do not recognize subtle intercat tension.

Signs of a good cat–cat relationship

Cats who are bonded may often be observed sleeping huddled or intertwined (Figure 17).[25,48] Allogrooming, allorubbing and nose-touching are also characteristics of an affiliative relationship (see box 'Affiliative feline behaviors and relaxed emotional state'). The degree to which cats perform these behaviors usually correlates with the solidness of their relationship. It is important to teach caregivers to look for affiliative behaviors, as the absence of such interactions may indicate intercat tension or toleration. Toleration between cats who do not demonstrate affiliative or agonistic behaviors is also an acceptable outcome (see box 'Tolerance in feline behaviors'; Figures 19 and 20). Often, caregivers will describe their cats as being 'good friends', but deeper investigation will reveal the cats do not nose-touch, sleep-touch, groom each other or bunt, suggesting that caregivers have misjudged the cats' relationship.

Affiliative feline behaviors and relaxed emotional state





Figure 17 **(a,b) Cats who sleep huddled or intertwined are well-bonded affiliative pairs.** *Images courtesy of Naomi Fleischmann (a) and Theresa DePorter (b)*

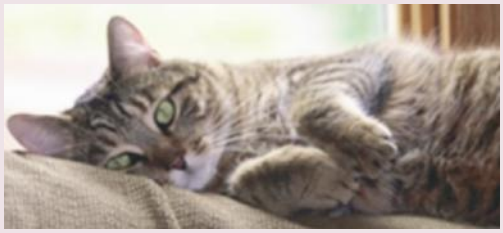


Figure 18 **More generally, a relaxed emotional state in a cat is characterized by soft muscle tone, ears pointing forward, small pupils or closed eyes. Often cats may slow blink and have their legs extended.** *Image courtesy of Theresa DePorter*

Affiliative behaviors

In decreasing order of frequency:

- Cat sleeping in the same room as another cat (this behavior may also occur in non-socially bonded cats preferring the same resource)
- Grooming of another cat by licking around the head or ears
- Sleep-touching
- Nose-touching

From Elzerman et al (2020)[2]

Tolerance in feline behaviors



Figure 19 The cats in the top bed get along well with each other but are not socially bonded with the cat in the lower bed. *Image courtesy of Theresa DePorter*



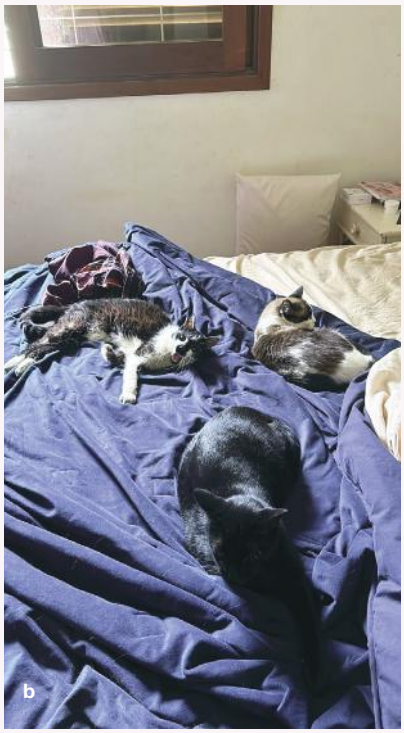


Figure 20 (a,b) Two or more cats in the same household who sleep on the same piece of furniture without touching may or may not be affiliates. In these households, the cats' preferred resource is the caregivers' bed, but they choose opposite ends and/or to face away from one another. If this behavior is consistent, the cats do not share a social bond but merely tolerate one another. *Images courtesy of Theresa DePorter (a) and Daniela Ramos (b)*

Tolerance behaviors
- Cats passing each other without interacting or displaying agonistic behaviors
- Sharing space without interactions or agonistic behaviors
- Time-sharing a location, object or human attention

Is it medical, behavioral or both?

Any cat showing changes in behavior should be assessed by a veterinarian to rule out medical problems. A change in behavior, such as hiding, not jumping up or new patterns and routines, can be the first sign of a medical problem but can also indicate social tension.

It is important to remind caregivers to be observant of routine day-to-day interactions among cats in their households. This vigilance makes it easier to recognize subtle but important changes in social interactions. Encouraging caregivers to monitor patterns and routines helps to identify changes that warrant closer attention to possible social or medical issues. A change in sleeping locations is something that is often under-recognized. Likewise feeding behaviors may alter – the cats may still be eating, but there may be an increase in swatting or staring behaviors before meals and the cats may gulp their food and leave quickly to avoid tension. Social tension may also result in a cat who is fearful to go to the litter box, giving rise to undesired elimination outside the litter box or urine marking. Strategy tips for recognizing tension in intercat relationships are provided in Box 3.

Degenerative joint disease may lead to compromised mobility, affecting how cats utilize their space. Upper respiratory disease may disrupt olfactory communication. The stress of multiple comorbidities in senior cats may affect their social relationships. More generally, a decrease in the sociability of a cat may be the first sign of the development of significant disease. Therefore, many behavioral or medical complaints that are presented to veterinary professionals may involve ruling out intercat tension as an underlying cause or contributing factor. Some cases may benefit from referral to a board-certified veterinary behaviorist trained in both medical and behavioral feline wellbeing.

Box 3

Strategy tips for recognizing tension in intercat relationships

- Always rule out medical problems if changes in behavior have occurred, including changes in relationships between cats.
- The most common signs of intercat tension are subtle and include staring, hiding and blocking. Importantly, both cats being blocked and those doing the blocking can also be distressed (D Gunn-Moore, 2023, personal communication).
- Cat play can be rough and sometimes difficult to differentiate from agonistic behavior.
- Cats often use agonistic behaviors to end an isolated cat-to-cat encounter, and usually this does not require caregiver intervention.
- Cats often spend considerable time out of other cats' sight, a behavioral trait that does not necessarily indicate intercat social tension.

Prevention of tension in intercat relationships

An understanding of feline social behavior is key to creating better living arrangements for household cats and thereby helping to prevent intercat tension.

Maximizing harmony in a multi-cat home: getting the environment right

Provision of the essential feline environmental needs, as encapsulated by the five pillars framework, is a critical step to prevent intercat tension in multi-cat homes, with plentiful key resources dispersed throughout the environment with visual barriers between them. The 'Five pillars of a healthy multi-cat environment' described in these Guidelines should aways be implemented, and enhanced and modified for the specific household situation, whenever possible.

Caregiver techniques to prevent and defuse tension

- Cats with high play drives often bother senior or more timid cats. Two or more caregiver-initiated play sessions daily of 5 mins or longer can channel excess playful energy onto appropriate toys.[49]
- Fitting the cat demonstrating agonistic behaviors with a cat-safe collar with a tiny bell that emits a low noise will provide an advanced warning system for other cats.
- Daily short-term segregation of cats displaying agonistic behaviors may provide restful periods; ensure that all cats always have access to a litter box, food and water, and a resting area.
- Caregivers should prevent staring by using a solid piece of furniture as a visual barrier between cats and/or by using vertical space. If this agonistic behavior is noticed between two cats, it is important not to attempt to pick up the cats. Instead defuse the tense situation by placing an inanimate object (eg, pillow, cushion, cardboard or solid laminate sheet) between them to diminish eye contact and distract them; then redirect each of them independently onto another activity (eg, play with a toy) or safely separate them into different locations.
- Provide daily play sessions with the entire group and/or with each social group separately, as appropriate. This is a great opportunity to train cats to relax (Figure 18) in the presence of each other and to use available safe places.

Generally, caregivers should not consider adopting another cat if a resident cat is a senior with medical concerns.

Introducing a new cat into the home

Initial adoption decisions

Although cats can form social relationships, some cats are more gregarious than others. Not uncommonly, cats may bond with related and familiar individuals, and ignore or create tension with other cats within the home. Caregivers should prioritize the welfare of each cat when deciding whether to acquire another cat, based on how each will deal with the introduction process and with group living. Spur-of-the-moment decisions should always be avoided. A variety of considerations are outlined below, and further information and discussion is available in the client brochure 'Are you thinking of getting another cat(s)?', available in the supplementary material.

- Make sure the resident cat(s) and the new cat have received veterinary care recently and are healthy. A number of other aspects that pertain to the selection of the new cat are described in Box 4.
- Before deciding to bring a new cat into the household, consider whether each cat's needs can be met with the provision of additional resources and by having a 'transition room' (see 'Before the new cat is brought home').
- Several factors should be considered, including age, play drive, socialization, adaptability and health, when making adoption decisions.
- If the decision to acquire a new cat is made, the question may arise of whether to adopt one cat or two. Research indicates that related individuals are more likely to remain bonded, with lower incidents of intercat tension,[50] and to show increased affiliative behaviors.[51] On occasion, it may be possible to adopt two bonded cats at the same time. However, some caveats apply. For two adult or senior cats, look for cats who are already bonded or related; for kittens, it is best if they are still within the socialization period (2–9 weeks). Another option is looking at shelters with 'foster to adopt' options,[52] which allow for the possibility to 'try out' the relationship to see if two individuals could be compatible. Once a decision has been made, a carefully managed and gradual introduction process remains key for integration of a new cat.

Caregivers should prioritize the welfare of each cat when deciding to acquire another cat, based on how each will deal with the introduction process and with group living.

Steps for creating a smooth transition

While it may be impossible to prevent all problems, certain techniques can facilitate the introduction process. Gradual introductions that do not cause fear–anxiety in any of the cats are essential, but can take time and caregivers need to be patient. The following steps will help create a smooth transition when a new cat is introduced into a household. More information is given in a handout, 'Step-by-step guide: How to introduce a new cat to other cats in your home', available in the supplementary material, and strategy tips for the prevention of tension are provided in Box 4.

Before the new cat is brought home

✣ **Step 1. Ensure each cat is healthy,** with recent veterinary care. Generally, caregivers should not consider adopting another cat if a resident cat is a senior with medical concerns.

✣ **Step 2. Prepare the home** before bringing the new cat into the household (see 'Five pillars of a healthy multi-cat environment').

– Place additional resources within the main areas of the home:

- Add more options that allow hiding, as well as safe places, perches/cat trees, litter boxes, feeding and drinking stations, and scratching surfaces.

– Create a transition room for the new cat while they are gradually integrated into the home:

- This must be a secure area with a latched barrier door that closes and locks completely;
- Supply the room with food and water, a litter box, perches at different vertical heights, hiding options, a soft bed, scratching surfaces, toys, etc;
- Remove items of value or those that could be dangerous to the cat (eg, plants, electric cords, strings) or might encourage house-soiling (eg, plush bath mats).

✣ **Step 3. Plug in feline synthetic pheromone diffusers** (eg, either Feliway Classic together with Feliway Friends/Multicat, or Feliway Optimum; Ceva) 24–48 h prior to introducing the new cat. Place diffusers in the main living area and in the transition room.

✣ **Step 4. Identify activities or treats favored by each individual cat,** including the cat to be newly introduced, as training rewards.

If intercat tension occurs at any point in the introduction process, go back a step. Continuing to take steps forward if tension presents can result in long-term tension.

When bringing the new cat home

Make sure that steps 1–4 have been completed before bringing the new cat home. Be aware that steps 5–11 may take several weeks, and even months, to work through. Importantly, if intercat tension occurs at any point in the introduction process, go back a step. Continuing to take steps forward if tension presents can result in long-term tension.

✣ **Step 5. Bring the new cat within a covered carrier directly to the transition room.** Close the door to the transition room and open the carrier door. Let the cat choose when to come out and begin exploring.

✣ **Step 6. Facilitate scent transfer between cats when all cats are relaxed,** which will usually be after a few days. Swap pieces of soft material, such as bedding used by each cat, between the transition room and the communal areas of the house occupied by the resident cat(s). Repeat daily until the cats do not respond negatively to the smell of the fabric (ie, display no urine marking, urine soiling or agonistic behavior).

✣ **Step 7.** If the cats are relaxed with the scent after a few days, **rub material over the facial glands (cheek, perioral, chin and temporal regions), alternating between the cats.** Place the pieces of scented material where the new cat and resident cat(s) can smell them.

✣ **Step 8.** If relaxed with scent transfer, **encourage play on either side of the closed dividing door.** Create a dumb-bell-style toy by tying two toys together with heavy string, placing one toy on each side of the closed door that separates the cats (Figure 21).

Box 4

Strategy tips for prevention of tension in intercat relationships

✣ The five pillars of a healthy multi-cat environment are the foundation for preventing intercat tension.

✣ Caregivers should be observant – continually monitoring cat-to-cat interactions to quickly detect and safely defuse any tensions that may arise.

✣ To proactively implement preventive strategies, veterinarians should ask clients at every visit if they anticipate adding another cat to the household and whether they are taking care of or feeding any cats, including outdoor cats, the practice has not seen.

✣ A gradual process for introducing a new cat to a household will help the resident household cat(s) adjust to and accept the newcomer. The process for introducing a pair of cats to one or more resident cats is the same. However, the individual dispositions of the new cats will determine the rate of the process, with the more cat-to-cat socialized individual settling down more quickly.

✣ Newcomer cats should be carefully selected for several aspects, such as age, neuter status, health, temperament, sociability to other cats and play drive (see client brochure 'Are you thinking of getting another cat(s)?', available in the supplementary material).

✣ Caregivers should be prepared for integration to take many weeks, if not months, and warned that they may need to go back one or more steps in the introduction process if tension arises.



Figure 21 Having a toy tied to either end of a piece of string in 'dumb-bell' fashion can allow a cat on one side of the door to interact indirectly with a cat on the other side. The principle is illustrated here with a single cat and open door to show the toys on either side. When introducing cats, the door will be closed, with one cat on either side. *Image courtesy of Daniel Mills*

– Do not allow overt persistent threatening behaviors (eg, hissing/growling at the door). If this occurs, do not discipline the cat showing agonistic behaviors, but instead create a neutral zone; this might involve closing another door or placing a visual barrier between the cats to block a hallway in front of the barrier door (eg, shoji screen, boxes or chairs).
– Keep the play session short (5–20 mins, based on each cat's responses) and terminate the session before the cats lose interest.

✣ **Step 9.** When the new cat appears settled in the transition room, and all cats are comfortable with the above steps, **confine the resident cat(s) within a different room and allow the new cat to briefly explore the communal areas of the house.** Then return the new cat to the transition room and give the resident cat(s) the choice to access the communal areas.

✣ **Step 10. Start allowing short sessions of visual access** using screening, a glass door, extra tall cat gate (door-sized pet gate) or door-strap product (eg, 'Door Monkey'). In homes where this is not possible, and if the cat is well accustomed to the carrier and has only had positive experiences while within it, a partially covered cat carrier could be used in this step. Continue to monitor body language to ensure all cats are comfortable. If not, immediately stop and return to steps 8 and 9 and repeat for a few more days before trying step 10 again.

✣ **Step 11.** When cats are relaxed with visualization, **attempt supervised close proximity with harnesses and leashes or with one cat in a partially covered carrier and the other(s) allowed to explore.** Leash and harness training (see Video 3 in the supplementary material) and carrier training must occur before step 11. Monitoring of body language to prevent or minimize fear–anxiety and frustration is necessary, with caregivers ready to interrupt any escalation in reactivity. Have means of passive intervention readily available should tensions arise (eg, large towels or blankets to cover the cats with, or cardboard or laminate sheets to block visual contact).
– *Never* interact with cats who are hissing, growling, tail flicking, urine marking or showing other signs of arousal because cats who cannot access the cat they are directing their agonism toward may readily redirect frustration onto the closest target.
– *Always* have items (balls, play toys, puzzles, etc) scattered around the environment in which the introduction takes place and treats readily available. These can be used both as distractions and rewards.

With success, periods when the cats are in proximity can gradually increase in duration and human supervision can gradually decrease until the cats can coexist without intercat tension.

All veterinary professionals should be able to recognize, triage and offer first-line advice for cases involving intercat tension, and to determine when to refer the client to a board-certified veterinary behaviorist.

General principles for managing tension in intercat relationships

All veterinary professionals should be able to recognize, triage and offer first-line advice for cases involving intercat tension, and to determine when to refer the client to a board-certified veterinary behaviorist. In some circumstances, it may not be possible for the cats to continue living together in the same home, in which case rehoming is the most humane option (see Box 7).

In broad terms, management of any behavior concern should follow the general principle of the 'three Rs': Risk management, Restriction of the problem and Resolution of the problem.[53]

✣ **Risk management** involves initial assessment of risks to the physical and emotional health and wellbeing of animals, clients (including from attempts to intervene) and, where relevant, the wider public. Risk, which is a function of both the likelihood (probability) and severity (type) of harm, is not static and needs to be monitored. Immediate and longer term measures should be taken in order to minimize risk as reasonably as possible. If individuals feel the need to intervene in a fight between cats, awareness of the risks of redirected frustration and potential human injury is necessary, as is appropriate protection.

✣ **Restriction of the problem** involves implementing immediate measures that prevent further complications while working toward resolution. The goal is that restriction measures are a temporary solution only, and that threatening or unpleasant actions (verbal, physical, etc) are always avoided, as discipline-based training is only likely to exacerbate the situation. Measures may include:
– Safely separating the cats involved, putting them in separate rooms with doors closed. Prevent human injury by using large towels

or blankets or placing a visual barrier such as cardboard or a laminate sheet between the cats.
– Leaving the cats alone (ie, separated and with no physical interaction) after an incident until they have calmed down and returned to their normal routines. This may take anywhere from a few hours to a couple of days.

✣ **Resolution of the problem** involves measures aimed at long-term management of the issue so that the health and welfare of cats and caregivers is optimized as far as is practically possible. Environmental management (see 'Five pillars of a healthy multi-cat environment') is an important component, including the use of feline synthetic pheromones, to eventually allow individuals to be reintroduced successfully or to coexist without significant intercat tension. Behavior modification techniques, complemented, where relevant, with the use of psychotherapeutic medications with or without nutraceuticals, may also be necessary.

Management of specific situations involving intercat tension

Management approaches for intercat tension depend on the individual household circumstances. There are two main situations to consider: tension within a household, and tension involving resident and outdoor neighborhood, stray or feral cats. In the case of intercat tension within a household, caregivers usually have control of the management of the problem. In cases of intercat tension involving outdoor cats, the caregiver only has limited control over management options.

Intercat tension within households

Problems of intercat tension within a household generally arise either when a new cat is introduced – hence the need for careful adoption choices and an appropriate, gradual and positive process for integrating new additions into the household – or a trigger (sometimes undetermined) disrupts the relationship between long-term cohabiting cats, even those who formerly had good affiliative bonds. The trigger may be external (eg, the threat from an outdoor cat may lead one resident cat to redirect frustration onto another) or internal (eg, pain or disease resulting in increased irritability, or a change in odor or behavior of a cat after a trip to the veterinarian).

Successful resolution depends on realistic caregiver expectations and their ability to effectively implement appropriate recommendations. The required actions are dependent on the individual household circumstances and temperament of the cats, but typically cover the following aspects.

Pheromone therapy is an important component of management, but must be used in conjunction with other intervention tools.

✣ **Feline physical health.** A veterinary assessment is necessary to ensure all cats are in good physical health and to rule out any medical conditions and sources of pain. Any illness or pain should be managed appropriately.

✣ **Age, temperament and compatibility of the cats involved.** Particular attention should be paid to traits relating to sociability, adaptability and playfulness (see 'Understanding feline social behavior' and 'Prevention of tension in intercat relationships').

✣ **Stressors in the home.** Significant potential stressors that might be a source of tension should be identified (see 'Five pillars of a healthy multi-cat environment'). In some cases, one of the cats may have adopted unhelpful behaviors such as occupying a particular area where tension arises (eg, blocking). In this situation, the cat needs to be encouraged to use other areas by associating them with pleasant experiences and rewards in the form of treats or interactive play with the caregiver.

✣ **Pheromone therapy.** Synthetic feline pheromones create changes in perception that reduce certain forms of distress and can encourage more desirable behavior. Strictly speaking, the term pheromone should be reserved for products containing chemicals

Box 5

Recommendations on the use of pheromones for managing intercat tension

✣ Feline facial pheromone fraction F3 (eg, Feliway Classic) can be used to help define a more relaxing core territory and to set up travel corridors (common travel paths for the household cats) within the home. An F3 diffuser or spray can also be used at intersections and areas that overlap (eg, hallways), or when potential stressors such as new objects or individuals (including visitors) enter the home. In the case of new objects, F3 spray can be applied directly onto them; in the case of unfamiliar people, it is preferable to use the diffuser.

✣ Feliway Multicat/Friends is a synthetic copy of the cat appeasing pheromone that is produced in the skin near the mammary glands, and is recommended for use in improving social interactions. The products are available in diffuser form and are best plugged in close to a location where a cat rests (eg, bedroom, preferred cat bed, cat tree). There is published evidence of the potential for cat appeasing pheromone to help with intercat tension.[55]

✣ Feliway Optimum is a synthetic pheromone complex that includes properties of both F3 and the cat appeasing pheromone. This can be used whenever there is uncertainty about which specific pheromone may be of value for intercat tension or for cases where both F3 and cat appeasing pheromone may be useful. Preliminary studies have suggested this complex helps with intercat tension, scratching, urine marking and fear,[56,57] but further evaluation through controlled clinical trials is needed to confirm efficacy.

✣ These products are generally simple to use, with minimal risk of side effects, but the manufacturer's instructions should always be followed. Attention should be paid to the presence and location of any air-conditioning vents, which may extract the synthetic pheromones from the environment. Diffusers should not be covered by furniture or other objects, or placed under cabinets or shelves.

involved in communication between cats. However, the term is not protected and so many other products based on scent may confusingly be labelled as containing pheromones or as being 'pheromone-related'. Specific responses to a pheromone product depend on the emotional state of the individual and can be very subtle. For example, in a cat who is already relaxed or, conversely, in the presence of clear signals of danger, pheromones may have little effect. Accordingly, the application of traditional evidence-based medicine to evaluate efficacy can be misleading.[54] Practical recommendations on the use of pheromones for managing intercat tension, based on consensus of the Guidelines Task Force, are provided in Box 5.

✣ **Reintegration training.** Reintegration can be used whether or not the cats are physically separated, in order to encourage acceptable behavior in each other's presence. In the case of cats who have been separated, the process of reintroducing them is similar to the steps described for creating a smooth transition when introducing a new cat into a home, but may be more difficult and require even more patience because of the current emotional state of the cats. The longer the cats have had a tense relationship and the more overt the agonistic behaviors, the more challenging they are to reintegrate and the more likely a board-certified veterinary behaviorist is needed. Key points to consider with reintegration are discussed in Box 6.

✣ **Medication.** Psychotherapeutic medication can be a useful adjunct to management and, in certain cases, an essential part of treatment, but should only be used in conjunction with environmental and behavior modifications. There are few psychopharmaceuticals licensed

Box 6

Recommended approach to reintegration in cases of intercat tension

✣ Because cat social groups share a communal scent,[58] odor exchange is a useful preliminary step. If the cats have been physically separated, exchange their scent daily for a week or so before attempting any visual reintroduction. This can be achieved by exchanging a familiar piece of soft material carrying their scent. If the home set-up permits, cats may be given access to communal areas on a time-share basis before any visual reintroduction is allowed. Synthetic feline pheromones may also be useful at this time to help facilitate acceptance of unfamiliar odors.

✣ Reintroduction of cats who have been separated must be done gradually, at a pace that all cats and social groups can accept. It should begin with cats coming together on either side of a dividing door or other partition. Cats can be encouraged to play on either side of the door using a piece of string with a small toy tied to either end (as described for 'Introducing a new cat into the home'; Figure 21). Any visual and physical access should be limited through the use of door straps, as discussed earlier. This also allows monitoring of the quality of behavior of the cats. Treats may be used as a distraction and to build a positive association. Exposure sessions should be carefully managed and kept to 5–20 mins maximum, preferably ending on a positive note with the use of treats or play with a favorite toy away from the partition. If cats show any sign of distress, the session should be ended immediately.

✣ When the cats can relax in the presence of partial visual access, then a fully transparent partition can be used and the process repeated.

✣ If all progresses well, the cats can be allowed into a communal area for supervised physical proximity on a time-limited basis (Figures 22 and 23). Cats may need to be harness-trained (see Video 3 in the supplementary material) and introduced on a leash, especially if one of the cats has sustained a previous serious injury or is highly fearful. The duration of access can be gradually increased over a period of weeks. Cats should not be forced to come into the area; if one or more cats consistently chooses to remain in a hiding place or to retreat at this stage, this should be interpreted as indicating persistent tension and the earlier steps repeated.

✣ If progress is not as expected, or there is any uncertainty, it is preferable to repeat a step than move forward in the hope that things will work out. A common error in reintroducing cats is rushing through the steps. The time required for achieving progress varies enormously, depending very much on the cats' adaptability and the caregiver's commitment to training. In less severe cases, reintroduction may take a few weeks; other cases may require several months or even a year or so (Figures 22 and 23; see also the case studies in the Appendix).

✣ Reintegration using group sessions is recommended to minimize tensions among cats who have not been separated (Figure 24). This provides an opportunity to train the cats to relax in each other's presence and to use available safe places to distance themselves from any cats they do not feel comfortable with.

✣ In severe cases, where there is persistent animosity between cats, serious consideration should be given to designing a home environment that allows permanent separation of the cats involved. Microchip-activated cat flaps on internal doors can support cats living within a multi-cat household. As an alternative, one or more of the cats may need rehoming into an environment without other resident cats (see Box 7).

✣ If tension has previously been observed in the household, including but not limited to the arrival home from a veterinary visit, the cat returning home should not be allowed back with other cats immediately, but should be reintroduced using the methods described above.

Cattery considerations

The reintegration principles discussed here also apply to cats living in cattery or rescue environments and should be followed whenever possible, even though the living conditions vary significantly (eg, sometimes cats are confined to very small areas, other times they are kept more freely in large groups). Awareness of these principles and recommendations allows the veterinary team to offer appropriate advice on selecting households for these cats.

Examples of reintegration in multi-cat households

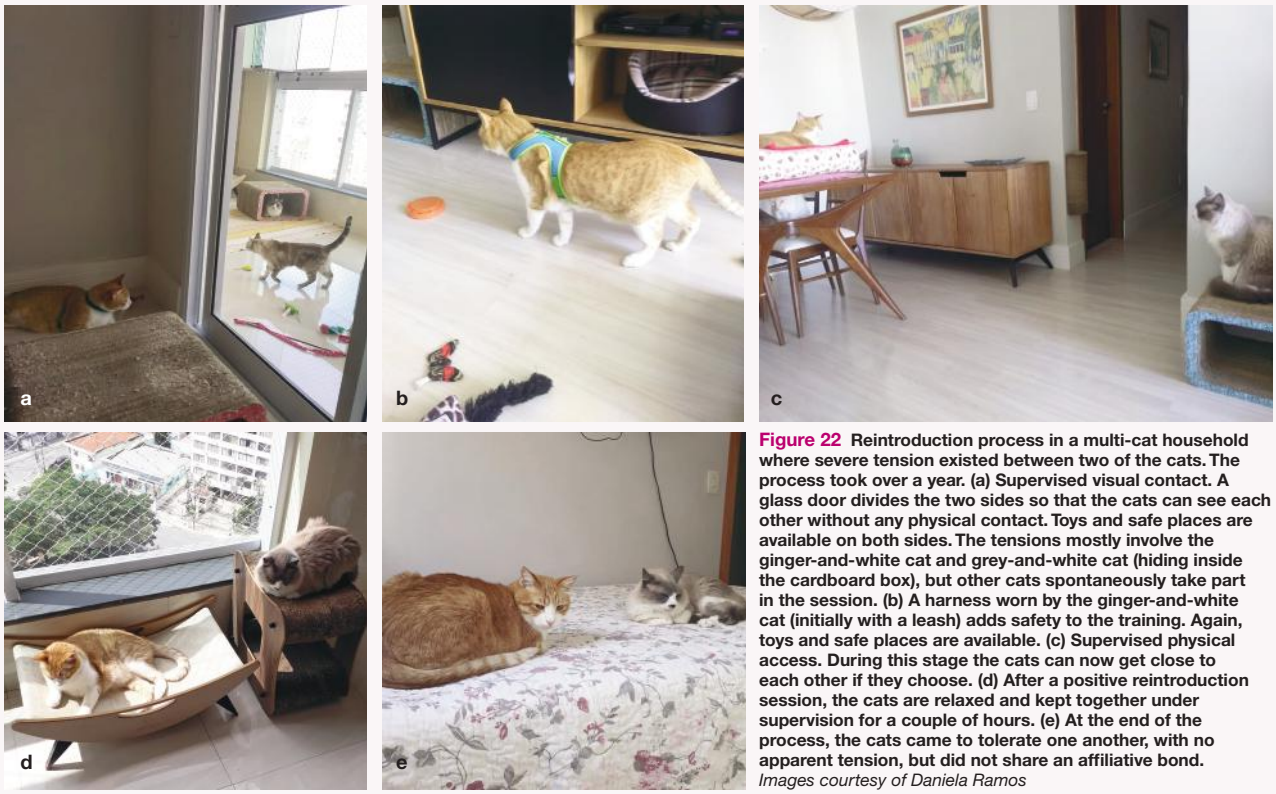


Figure 22 Reintroduction process in a multi-cat household where severe tension existed between two of the cats. The process took over a year. (a) Supervised visual contact. A glass door divides the two sides so that the cats can see each other without any physical contact. Toys and safe places are available on both sides. The tensions mostly involve the ginger-and-white cat and grey-and-white cat (hiding inside the cardboard box), but other cats spontaneously take part in the session. (b) A harness worn by the ginger-and-white cat (initially with a leash) adds safety to the training. Again, toys and safe places are available. (c) Supervised physical access. During this stage the cats can now get close to each other if they choose. (d) After a positive reintroduction session, the cats are relaxed and kept together under supervision for a couple of hours. (e) At the end of the process, the cats came to tolerate one another, with no apparent tension, but did not share an affiliative bond. *Images courtesy of Daniela Ramos*





Figure 23 (a,b) Reintroduction process in a second multi-cat household. Intercat tension was moderate and the process took several months to complete, with the cats remaining separated outside of the reintroduction sessions. (a) During physical access under the caregiver's supervision, a sealpoint Siamese displays agonistic (staring) behavior toward a white-and-cream colored domestic shorthair cat, who adopts a fearful posture. At this point in the process, the caregiver intervened by redirecting the Siamese's behavior toward a toy while encouraging the other cat to a safe place. (b) After carefully managed reintroductions under supervision for a few hours at a time over a few months, the two cats came to tolerate one another, though were not an affiliative pair. *Images courtesy of Daniela Ramos*

A common error in reintroducing cats is rushing through the steps.

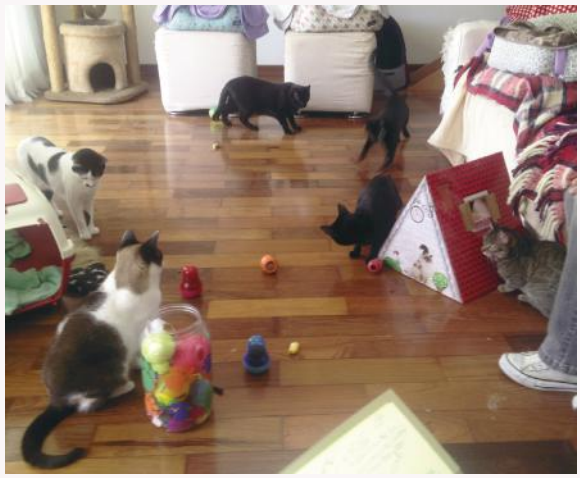


Figure 24 Group reintegration session. The room is occupied by cats who showed tension but did not need to be kept separated during treatment. Several cats felt comfortable in close proximity during the session. Plenty of toys and safe places are available. The caregiver supervises while interacting with each of the cats and terminates the session before they lose interest. *Image courtesy of Daniela Ramos*

Table 1 **Drugs that may be considered for amelioration of intercat tension** (continued on page 22)

	Class of drug	Mechanism of action	Suggested oral dosage*†	Potential side effects‡	Practical considerations
Fluoxetine	SSRI	Strong inhibitor of serotonin reuptake. Weak inhibitor of norepinephrine uptake	0.5–1.0 mg/kg q24h	Decreased food intake (inappetence increases with dose), lethargy, vomiting (rare), urinary retention reported	✣ Often a first-line treatment ✣ Allow 4–6 weeks to assess effect ✣ There is an approved product licensed only for dogs but it is accepted well when used off-label in cats ✣ Long half-life
Paroxetine	SSRI	Highly selective inhibitor of serotonin reuptake. Weak effects on neuronal reuptake of dopamine and norepinephrine	0.25–0.5 mg/kg q24h	Decreased food intake (inappetence increases with dose), lethargy, vomiting (rare), urinary retention and constipation reported	✣ Urinary retention may be serious ✣ Allow 4–6 weeks to assess effect
Sertraline	SSRI	Selective inhibitor of neuronal serotonin uptake. Weak effects on neuronal reuptake of dopamine and norepinephrine	0.5–1.0 mg/kg q24h	Decreased food intake (inappetence increases with dose), lethargy	✣ Uncommonly used in cats ✣ Less data available than for other SSRIs ✣ May be bitter tasting ✣ Allow 4–6 weeks to assess effect
Buspirone	Azapirone	Blocks pre- and post-5-HT_{1A} receptors; downregulates 5-HT_2 receptors; moderate affinity for D2 dopamine brain receptors	0.5–1.0 mg/kg q12–24h	Side effects uncommon or mild. Gastrointestinal side effects may occur and may be mild/transient. Caution with hepatic or renal disorders	✣ Well tolerated ✣ Allow 2–4 weeks to assess effect ✣ The cat who is commonly the recipient of agonism from others may be more confident while on buspirone and thus may be at risk if the cat(s) showing agonistic behavior is/are bold ✣ Cat may become more affectionate
Venlafaxine	SNRI	Boosts neurotransmitters – serotonin, norepinephrine and dopamine	2.5–5.0 mg/cat q12–24h or 0.5–2.0 mg/kg q24h	There is no information regarding safety for long-term use in cats	✣ Very limited data on use in cats ✣ For expert use only ✣ Consider in cases refractory to first-line medications ✣ Allow 30 days to assess effect[59]
Gabapentin	GABAergic agent	GABA analog	Chronic use: 3–10 mg/kg q12h Reduce dose by 50–75% if kidney disease is present	Lethargy, sedation or ataxia	✣ May be useful for pain management ✣ Rapid onset – may be useful in cases of intercat tension that require immediate improvement ✣ Highly variable absorption ✣ Schedule V drug in some US states and a restricted drug in some countries, which impacts dispensing ✣ Concerns about this drug being diverted for illicit use in humans
Pregabalin	GABAergic agent	GABA analog	1–2 mg/kg q12h	Similar to gabapentin There is no information regarding safety for long-term use in cats	✣ Similar to gabapentin ✣ Schedule V drug in some US states
Clomipramine	TCA	Inhibitor of norepinephrine and serotonin reuptake	0.25–0.5 mg/kg q24h	Sedation, ataxia, constipation, urinary retention, cardiac arrhythmias	✣ Allow 4–6 weeks to assess effect
Amitriptyline	TCA	Inhibitor of norepinephrine reuptake. Central and peripheral anticholinergic activity. Antagonism of the H1 receptor. 5-HT reuptake inhibition. Glutamate and Na^+ channel receptor antagonist	0.5–1.0 mg/kg q12–24h	Sedation, ataxia, constipation, urinary retention, cardiac arrhythmias	✣ Bitter taste and profound sedative effects make this drug a poor choice ✣ Allow 4–6 weeks to assess effect

For 'Important notes for veterinarians' and table footnotes see page 22

Table 1 (continued from page 21)

IMPORTANT NOTES FOR VETERINARIANS
- This table is intended to be a preliminary guide and not an extensive formulary. Consult formulary for full information on drug effects.
- Many of these agents are not approved for feline use but have been used off-label in cats.
- Obtain informed client consent before using.
- There is currently no good scientific evidence that CBD oil works in feline behavior issues and it should not be used.
- All doses are oral. Transdermal dosing is not recommended.
- Attempts to give medications hidden in treats (not food) should be thoroughly exhausted, and force pilling avoided to minimize stress and damage to cat–caregiver bond.
- In general, with long-term use of psychotherapeutics, taper gradually and never stop abruptly.

*Start at the lowest dose and increase gradually if needed. Side effects are more common at higher dosages and usually occur during the first 1–10 days of treatment. The maximum dosage is only needed in rare cases for SSRIs and TCAs
†References for dosages: Overall (2013),[25] Metz et al (2022),[59] Crowell-Davis et al (2019),[60] Horwitz and Mills (2018),[61] Pflaum and Bennett (2021),[62] Plumb (2015),[63] Seksel et al (2024)[64]
‡SSRIs may cause inappetence and/or urinary and fecal retention; recommend to caregivers to monitor appetite, and urine and fecal output, especially during the first 2 weeks of treatment
BZ = benzodiazepine; CBD = cannabidiol; GABA = gamma-aminobutyric acid; SARI = serotonin 2 antagonist/reuptake inhibitor; SNRI = dual serotonin and norepinephrine reuptake inhibitor; SSRI = selective serotonin reuptake inhibitor; TCA = tricyclic antidepressant

for use in cats and none for intercat tension. Table 1 summarizes drugs that may be considered for use. Note that the Guidelines Task Force chose not to make recommendations on specific drugs, principally because variations in drug availability globally and considerations for off-label use necessitate an individualized approach for each case.

The goal of medication should be to improve the wellbeing of cats, optimize their ability to learn and minimize the risks associated with intercat conflict. However, the use of medication is itself not without risk. In some cases, the process of medicating a cat might also be stressful or even impractical for cats and caregivers (see the '2022 AAFP/ISFM Cat Friendly Veterinary Interaction Guidelines: Approach and Handling Techniques',[11] and the AAFP's client brochure on 'Giving Your Cat Medication', available at catfriendly.com/medication). A risk–benefit analysis should be performed and, if doubts about medication exist, the focus should be on restricting the problem (see box 'Restricting intercat tension while seeking resolution') and seeking the help of a board-certified veterinary behaviorist. There are also several pharmacology texts that can be referred to for further information.[65,66]

Nutraceuticals. An increasing number of nutraceuticals claim to promote behavioral change, but none are specifically targeted at helping to manage intercat tension. The efficacy of these products for this indication is not established, but some behaviorists have reported positive clinical results with their use in combination with behavior modification.[67] In general, if chemical psychotherapeutic intervention is indicated, it is often preferable to use a medication over a nutritional supplement.

The goal of medication should be to improve the wellbeing of cats, optimize their ability to learn and minimize the risks associated with intercat conflict. Medications should only be used in conjunction with environmental and behavior modifications.



Restricting intercat tension while seeking resolution

Intercat tension within a household
- Ensure each group of cats involved has the essential resources (see 'Five pillars of a healthy multi-cat environment') for establishing their own core territory without needing to come into contact with other cats.
- Make full use of the available three-dimensional space.
- Physical separation may or may not be required on the basis of the risk assessment. If the cats are not physically separated then there should be ample provision of escape retreats (eg, tunnels or spaces behind furniture) and safe hides with at least two points for entry and exit.

Intercat tension involving outdoor cats
- For resident cats with outdoor access, consider keeping the cats indoors only.
- Ensure outdoor neighborhood, stray or feral cats cannot enter the home (eg, via cat flaps) with the use of microchip-activated cat flaps.
- Block visual access to any outdoor neighborhood, stray or feral cats (eg, opaque screens or film on windows).

Intercat tension involving outdoor cats

Tension involving resident cats and outdoor neighborhood, stray or feral cats may typically arise when a caregiver moves into a new property and their grounds are already the established territory of another cat, or when a neighbor acquires a new cat who tries to assert themselves in a territory involving the caregiver's grounds. Beyond the measures outlined in the box 'Restricting intercat tension while seeking resolution', there are a few measures caregivers can take to resolve the problem, as outlined below.

- **Build neighborhood relations.** Intercat tension can often result in neighborhood disputes, but it is important to try to nurture good relationships with the caregivers of other cats. Cooperation may be essential to achieve shared goals, such as agreed times when cats can be safely outdoors without encountering each other, or modifications that prevent or deter other cats from entering the grounds.
- **Harness training.** A harness and leash may enable cats to go out safely under close supervision, in a safe and quiet location without unfamiliar cats in the area (see Video 3 in the supplementary material).
- **Adapt the home environment.** It may be possible to build a feline patio ('catio'; Figure 25) or similar structure so that the caregiver's cat(s) can go outside safely.[30]

Letting the cats 'work it out' impairs feline welfare and is not considered an acceptable approach.

Figure 25 **'Catios' can be a very effective way to allow safe outdoor access and can be constructed with relatively little expense. This 8 ft x 13 ft (2.5 m x 4 m) catio took advantage of a small enclosed space and was a weekend DIY project that cost less than $200 USD in materials.** *Image courtesy of Daniel Mills*



Good neighborhood relations may be essential to achieve shared goals, such as agreed times when cats can be safely outdoors without encountering each other.

Algorithm for the assessment and management of intercat tension

The approach to intercat tension discussed in these Guidelines is summarized in an algorithm presented on pages 24–26 in three parts:

- 1. First-line approach – prevention and first-aid measures.
- 2. More in-depth behavioral therapy.
- 3. Re-evaluation and monitoring.

Box 7

Is rehoming the best option?

Not all cases of intercat tension can be resolved. Clients with multi-cat households need to be aware of this reality, in particular when considering bringing a new cat into the household. The importance of the introduction process in this scenario cannot be overemphasized. In some situations, rehoming may be preferable sooner rather than later, but may not always be an option (eg, for regional or cultural reasons). When considering the necessity for rehoming, a behavioral assessment should be made of the cats. Also, the caregiver's capability, motivation and opportunity with regard to implementation of any behavior modification and/or treatment plan must be evaluated.

Ultimately, the decision to rehome one or more cats is the caregiver's, but the veterinarian has an important role in guiding this process and minimizing the stress associated with it. The following are key considerations:

- What is the severity of any physical injury being delivered by each cat and to whom?
- What are the relationships between all the cats? It is in a cat's interest to be rehomed with their close affiliates (if any) instead of by themselves. So, a cat who is more solitary may be easier to rehome than a group of cats.
- Are there particularly strong bonds between the caregiver and a specific cat (eg, associations with a deceased partner)? Or is the relationship still developing between caregiver and cat (eg, if recently acquired)?
- What is the prognosis for reintegrating the cats? This should be reviewed regularly.
- Would the cat(s) struggle with going through weeks or months of behavior modification therapy?
- Which cat(s) stand a better chance of being rehomed? Senior cats and black cats have a poorer chance of being rehomed.

The algorithm, which contains additional information regarding group sessions as well as a behavioral first aid kit, is designed to help veterinary professionals identify and manage tension within multi-cat households, and to assist appropriate decision-making that will increase the chances of successful resolution.

Intercat tension algorithm
1. First-line approach – prevention and first-aid measures

MULTI-CAT HOUSEHOLDS
Intercat tension should always be evaluated, even if it is not a primary complaint

List all interactions (affiliative and agonistic) that occur between the cats. Considering their frequency and intensity, determine whether intercat tension is present. The way each cat copes with the interactions, and the impact on their quality of life, both matter. For instance, if one cat is experiencing only mild confrontation with another but is showing an intense response (eg, hiding >50% of the time), there is significant intercat tension.

Affiliative behaviors
Rubbing against another
Allogrooming
Sleep-touching
Nose-touching

Agonistic behaviors
Staring, stalking, blocking, cornering, chasing, swatting, scratching, biting or physical conflict; freezing in the presence of another; routinely avoiding another; hiding >50% of the time; tufts of fur from interactions

INTERCAT TENSION IS NOT RELEVANT

THERE IS RELEVANT INTERCAT TENSION

- Monitor interactions between cats
- Implement the five pillars of a healthy multi-cat environment
- Pay special attention to common intercat tension triggers (eg, outdoor neighborhood, stray or feral cats, veterinary visit). In the presence of these, take preventive actions (see 'Preventive actions for common intercat tension triggers' below)

- Behavioral first aid kit (see below)

Behavioral first aid kit

1. Veterinary examination to assess for medical condition and pain; veterinarian–client–patient relationship must be established
2. Assess welfare and injury (human and feline), and separate animals, as required, to prevent risk of additional injury and/or emotional trauma
3. Review daily routines and identify possible stressors. Stop things from getting worse!
4. Create safe places; ensure enough places are freely accessible for each cat
5. Use synthetic feline pheromones in the environment
6. Ensure extensive implementation of the five pillars of a healthy multi-cat environment; modify the environment accordingly
7. Discontinue reprimanding the cat or attempting discipline-based training (eg, stop yelling at the cat)
8. Ensure cats are separated at feeding time with visual barriers
9. Evaluate the need for a behavior modification plan with a board-certified veterinary behaviorist
10. Follow-up with caregiver in 2 weeks to evaluate outcomes

Preventive actions for common intercat tension triggers

Outdoor cats:	Pheromone therapy + Blocking visual access + Scheduled space occupation by household cats when outdoor cats are not around
Veterinary visit/stay:	Pheromone therapy + Monitor reunion with the group, taking small steps in order to prevent tension; in the case of cats returning from anesthesia, wait for full recovery before reintroducing the cats and begin with scent exchange to refamiliarize the cats
Sick, painful or aging cats:	Pheromone therapy + Pain and disease management + Adjust resource distribution to ensure accessibility to all cats
Death of cat, dog or other family member:	Pheromone therapy + Enhance play opportunities, petting sessions and/or safe places – whatever is best to improve/elevate the emotional state of the cat(s), as necessary, and prevent tension due to changes in social structure
Redecoration/refurbishment:	Pheromone therapy + Keep cat furniture (scratching posts, beds, perches, etc) in place + Create a safe place + Undertake redecoration/refurbishment gradually, pausing to reflect on impact on resident cats at meaningful times
Moving house:	Pheromone therapy + Bring cat's furniture to the new house + Create a safe place + Gradually allow access to the whole home based on emotional and behavioral state (take small steps to prevent tension)
New arrival (pet):	Pheromone therapy + Make gradual introductions (take small steps to prevent tension; see 'Introducing a new cat into the home') + Adjust cat–pet interactions according to feline social behavior and cat individuality
Change in human family composition or change in cat–human interactions:	Pheromone therapy + Adjust cat–human social interactions according to feline social behavior and cat individuality

Intercat tension algorithm
2. More in-depth behavioral therapy

If there is relevant intercat tension and application of the behavioral first aid kit (see page 24) does not resolve the problem sufficiently, a more in-depth approach should be taken. For this, a consultation with a board-certified veterinary behaviorist is advised. At this point, a recheck examination of the involved cats, including evaluation of their emotions (eg, fear–anxiety, frustration, pain), should be carried out. The severity of the case, its impact on the household and risk of injury to cats and people are then determined, and decisions made concerning the need to separate and/or medicate the cats.

THERE IS RELEVANT INTERCAT TENSION

THERE IS NO NEED TO KEEP CATS SEPARATED DURING TREATMENT

- Carry out reintegration in the form of 'group sessions' (see below). The goal is to create cohabitation with less tension
- Intermittent separation (eg, at night-time, when unsupervised) during initial treatment may be useful

CATS NEED TO BE KEPT SEPARATED DURING TREATMENT

- Carry out reintegration in the form of 'reintroduction sessions' (see below). The goal is to create cohabitation with less tension
- Continue applying synthetic feline pheromones and implementing the five pillars of a healthy multi-cat environment
- Review daily routines (add predictability)
- Review all possible stressors (minimize them if they cannot be prevented) and potential triggers (see Part 1, 'Preventive actions for common intercat tension triggers')
- Consider psychotherapeutic medications (see Table 1)

Group sessions

Key aspects of group sessions are outlined below. All cats can take part as long as they are not forced to be in close proximity if they are not comfortable. Sessions should be kept short (approximately 5–20 mins) and finished before cats lose interest. Ideally, group sessions should be carried out as part of the cats' daily routine.

Sessions are performed in different places around the house – particularly in the areas where there is intercat tension, although these areas should be ranked for their suitability and used in order accordingly (ie, beginning in calmer areas, but also considering the suitability of the location in terms of space for the cats, furniture, etc).

Sessions start with the caregiver scattering a variety of special toys around the session environment – eg, toys that allow interactive play as well as cat self-directed play, automatic toys, stuffed toys of different sizes, etc.

The caregiver must be proactive during sessions – not simply observing the cats, but interacting with each of them, one at a time.

Cats who are not interested in playing should be encouraged just to observe from available safe places – the caregiver may need to bring safe places, such as a cat tree or perches, into the session environment. Alternatively, if enjoyed by the cat, petting or brushing may be performed by the caregiver.

Sessions terminate with treats – offered to each of the cats in the session area. Cats are never encouraged to eat in close proximity to one other. Food provided for the cats' daily meals is not used during the group sessions and the treats are not available at other times.

Reintroduction sessions

Progress through the below steps should be gradual and dictated by the cats' abilities to adapt. The time taken for each step is very variable. If there is no reduction in signs of tension or tension increases, maintain that stage for longer or go back to the previous step. Use of special food, toys and extra safe places is recommended during sessions, as well as safety equipment (eg, harness, leash and carriers), as necessary. Sessions are initially conducted in the same part of the house until the cats are entirely comfortable, before moving to new areas of the home.

Step 1 – Let the cats become comfortable in their separate areas, but allow them individual times when they can explore the other areas of the home.

Step 2 – Enhance olfactory and auditory contact, still at a distance, with each cat in their respective separated areas (eg, scent exchange via bedding swaps).

Step 3 – Allow supervised visual contact, enabling the cats to see each other from a distance (eg, each cat in their carrier if they are familiarized and very comfortable in them, or both cats free but separated by a glass door).

Step 4 – Provide supervised physical proximity, whereby the cats are able to be close to each other (eg, each cat in a harness and leash, or both cats free if they are very relaxed). See Videos 8–10 in the supplementary material.

Step 5 – Bring the cats together under supervision for short periods outside of reintroduction sessions (eg, a couple of hours following a very positive reintroduction session).

Step 6 – Keep the cats together, most of the time initially, and then all the time.

Intercat tension algorithm
3. Re-evaluation and monitoring

Behavior modification therapy should be closely monitored, ideally with weekly follow-ups. Veterinary professionals should emphasize to caregivers the importance of reaching out to report any changes or to ask questions. As reintegration training progresses, cat-to-cat interactions should be reviewed for any signs of intercat tension. If a cat is started on selective serotonin reuptake inhibitor treatment, assessment of medication efficacy can only begin around 30 days of therapy.

RE-EVALUATE INTERCAT TENSION

CAN THE CATS LIVE WELL TOGETHER?
Defined as principally affiliative behaviors or toleration demonstrated, and only occasional low-level intercat tension
(wellbeing should not be compromised despite low-level intercat tension)

YES
Intercat tension has decreased

INTERCAT TENSION SUCCESSFULLY RESOLVED

NO
Intercat tension has not decreased sufficiently and is still a concern

- Consider medication regimen: initiate medication, continue medicating for longer and/or change medication
- Continue reintegration process
- Continue intermittent separation or discuss permanent separation of the cats
- Consider rehoming of one or more cats

Supplementary material

The following supplementary material files are available at go.jfms.com/Intercat_tension_GLs_2024 and at catvets.com/tension:

- Questionnaire for multiple-cat households.
- Behavior modification recommendations for multiple-cat households.
- Step-by-step guide: How to introduce a new cat to other cats in your home.
- Video 1: How to interact with your cat – the Battersea way.
- Video 2: Understanding cat body language – the Battersea way.
- Video 3: How to train your cat to walk on a harness and leash.
- Video 4: Distress and intercat tension occurring during food preparation.
- Video 5: Intercat tension between two residents in a multi-cat household, with one cat showing agonistic (staring) behavior, and the other inhibition (freezing) and avoidance (retreating) behavior.
- Video 6: Intense manifestations of social tension between two cats (same cats as in Video 5), including repelling behaviors (growling, hissing, swiping) and physical conflict.
- Video 7: Play between two affiliated cats in a multi-cat household.
- Video 8: Management of intercat tension among four resident cats using a process of reintroduction. The calico cat had previously been separated from the group. The caregivers proactively play, pet and praise the cats during a supervised physical proximity session.
- Video 9: During a supervised physical proximity session as part of a process of reintroduction for management of intercat tension in a multi-cat household, a calico cat (same cat as in Video 8) shows repelling (swatting) behaviors. When one caregiver tries to interrupt the interaction by using his foot, the other caregiver promptly reminds him to use a visual barrier, handing him a cushion to prevent human injury and to defuse the intercat tension.
- Video 10: After a very positive supervised physical proximity session performed as part of a process of reintroduction for management of intercat tension in a multi-cat household, the cats (same cats as in Videos 8 and 9) appear very relaxed near each other; thus, the caregivers opt to keep them in the room together after the session.
- AAFP Client brochure – 'Are you thinking of getting another cat(s)?'



Acknowledgements

These Guidelines were supported by educational grants to the AAFP from Ceva Animal Health, Hill's Pet Nutrition, Inc and Sleepypod.

SUMMARY POINTS

- The '2024 AAFP intercat tension guidelines: recognition, prevention and management' provide veterinary professionals with the tools to address social tension among cats. This is an important concern for those in primary practice as cat ownership has increased globally, with a high percentage of cats residing in multi-cat households. Agonistic feline relationships are common and impair feline welfare, including if the signs are subtle and not recognized.
- The 'Five pillars of a healthy multi-cat environment' discussed in these Guidelines provide the foundation for compatible social relationships, either affiliative or toleration, among cats. Veterinary professionals should ensure that, as far as possible, caregivers adhere to them.
- Effectively managing intercat tension involves the general principle of the 'three Rs': Risk management, Restriction of the problem and Resolution of the problem.
- Early intervention with positive reward-based training (always avoiding discipline-based training) is critical. For mild intercat tension, where prompt treatment is implemented, the prognosis is generally excellent.
- Although not labelled specifically for treating intercat tension, judicious use of psychotherapeutic medications can be useful in some cases, in conjunction with environmental and behavioral modifications, and with careful monitoring. The goal is to improve the wellbeing of cats, optimize their ability to learn and minimize the very real risks associated with intercat tension.
- In refractory cases, or if the veterinary professional feels unprepared to manage intercat tension, caregivers should be referred to a board-certified veterinary behaviorist because of the complex interrelationship between medical and behavior concerns.
- The 'Intercat tension algorithm' included in these Guidelines provides a systematic pathway for evaluation and resolution of this often challenging, but commonplace, problem. The advantages are potentially wide-ranging, benefiting the wellbeing of cats, their caregivers and the veterinary team. Many of the principles are illustrated in a series of 'cat cases', summarized in an Appendix to the Guidelines.



The Task Force gratefully acknowledges the contribution of Edward W Kanara, DVM, DABVP of the Kanara Consulting Group; Mark Dana of Scientific Communications Services; Heather O'Steen, CAE; Margaret Melling; and University of Georgia veterinary student, Jessica Holmes, in the preparation of the Guidelines manuscript.

Conflict of interest

Members of the Task Force have received financial remuneration for providing educational material, speaking at conferences and/or consultancy work; however, none of these activities cause any direct conflict of interest in relation to these Guidelines. Specifically, Daniel Mills has received grants in the past from Ceva Animal Health, and Daniela Ramos and Theresa DePorter have received speaking fees or consultancies from Ceva Santé Animale.

Funding

The members of the Task Force received no financial support for the research, authorship, and/or publication of this article.

Ethical approval

This work did not involve the use of animals and therefore ethical approval was not specifically required for publication in *JFMS*.

Informed consent

This work did not involve the use of animals (including cadavers) and therefore informed consent was not required. For any animals or people individually identifiable within this publication, informed consent (verbal or written) for their use in the publication was obtained from the people involved.

References

1 Roberts C, Gruffydd-Jones T, Williams JL, et al. **Influence of living in a multicat household on health and behaviour in a cohort of cats from the United Kingdom.** *Vet Rec* 2020; 187: 27. DOI: 10.1136/vr.104801.
2 Elzerman AL, DePorter TL, Beck A, et al. **Conflict and affiliative behavior frequency between cats in multi-cat households: a survey-based study.** *J Feline Med Surg* 2020; 22: 705–717.
3 Ramos D, Reche-Junior A, Hirai Y, et al. **Feline behaviour problems in Brazil: a review of 155 referral cases.** *Vet Rec* 2020; 186: e9. DOI: 10.1136/vr.105462.
4 Bamberger M and Houpt KA. **Signalment factors, comorbidity, and trends in behavior diagnoses in cats: 736 cases (1991–2001).** *J Am Vet Med Assoc* 2006; 229: 1602–1606.
5 Amat M, de la Torre JLR, Fatjó J, et al. **Potential risk factors associated with feline behaviour problems.** *Appl Anim Behav Sci* 2009; 121: 134–139.
6 Loberg JM and Lundmark F. **The effect of space on behaviour in large groups of domestic cats kept indoors.** *Appl Anim Behav Sci* 2016; 182: 23–29.
7 Khoddami S, Kiser MC and Moody CM. **Why can't we be friends? Exploring factors associated with cat owners' perceptions of the cat-cat relationship in two-cat households.** *Front Vet Sci* 2023; 10. DOI: 10.3389/fvets.2023.1128757.
8 Vitale KR. **The social lives of free-ranging cats.** *Animals (Basel)* 2022; 12. DOI: 10.3390/ani12010126.

9 Finka L. **Conspecific and human sociality in the domestic cat: consideration of proximate mechanisms, human selection and implications for cat welfare.** *Animals (Basel)* 2022; 12. DOI: 10.3390/ani12030298.
10 Heath S. **Understanding feline emotions: … and their role in problem behaviours.** *J Feline Med Surg* 2018; 20: 437–444.
11 Rodan I, Dowgray N, Carney HC, et al. **2022 AAFP/ISFM cat friendly veterinary interaction guidelines: approach and handling techniques.** *J Feline Med Surg* 2022; 24: 1093–1132.
12 Panksepp J. Affective neuroscience: The foundations of human and animal emotions. New York: Oxford University Press, 1998, pp 466–xii.
13 Mills D and Ewbank R. **ISAE, ethology and the veterinary profession.** In: Animals and us. Wageningen, Netherlands: Wageningen Academic Publishers, 2016, pp 95–112.
14 Heath S. **Environment and feline health: at home and in the clinic.** *Vet Clin North Am Small Anim Pract* 2020; 50: 663–693.
15 Gajdoš Kmecová N, Peťková B, Kottferová J, et al. **Are these cats playing? A closer look at social play in cats and proposal for a psychobiological approach and standard terminology.** *Front Vet Sci* 2021; 8. DOI: 10.3389/fvets.2021.712310.
16 Izawa M. **Flexibility of the social system of the feral cat, *Felis catus*.** *Physiol Ecol Jpn* 1993; 29: 237–247.
17 Vitale KR and Udell MAR. **The quality of being sociable: the influence of human attentional state, population, and human familiarity on domestic cat sociability.** *Behav Processes* 2019; 158: 11–17.
18 Finka LR and Foreman-Worsley R. **Are multi-cat homes more stressful? A critical review of the evidence associated with cat group size and wellbeing.** *J Feline Med Surg* 2022; 24: 65–76.
19 Vitale Shreve KR, Mehrkam L and Udell MAR. **Social interaction, food, scent or toys? A formal assessment of domestic pet and shelter cat (*Felis silvestris catus*) preferences.** *Behav Processes* 2017; 141(Pt 3): 322–328.
20 Montague MJ, Li G, Gandolfi B, et al. **Comparative analysis of the domestic cat genome reveals genetic signatures underlying feline biology and domestication.** *Proc Natl Acad Sci U S A* 2014; 11: 17230–17235.
21 Suchak M, Piombino M and Bracco K. **Predictors of proximity to others in colony housed shelter cats (*Felis silvestris catus*)** [abstract]**.** *Pet Behav Sci* 2016; 10: 24–33.
22 Vitale K, Behnke A and Udell M. **Attachment bonds between domestic cats and humans.** *Curr Biol* 2019; 29: R864–R865.
23 Gajdoš-Kmecová N, Peťková B, Kottferová J, et al. **An ethological analysis of close-contact inter-cat interactions determining if cats are playing, fighting, or something in between.** *Sci Rep* 2023; 13: 92. DOI: 10.1038/s41598-022-26121-1.
24 McCune S. **The impact of paternity and early socialisation on the development of cats' behaviour to people and novel objects.** *Appl Anim Behav Sci* 1995; 45: 109–124.
25 Overall K. Manual of clinical behavioral medicine for dogs and cats. St Louis, MO: Elsevier, 2013.
26 Carney HC, Sadek TP, Curtis TM, et al. **AAFP and ISFM guidelines for diagnosing and solving house-soiling behavior in cats.** *J Feline Med Surg* 2014; 16: 579–598.
27 Walker JK, Waran NK and Phillips CJ. **Owners' perceptions of their animal's behavioural response to the loss of an animal companion.** *Animals (Basel)* 2016; 6: 68. DOI: 10.3390/ani6110068.
28 Grigg EK and Kogan LR. **Owners' attitudes, knowledge, and care practices: exploring the implications for domestic cat behavior and welfare in the home.** *Animals (Basel)* 2019; 9: 978. DOI: 10.3390/ani9110978.
29 Ellis SLH, Rodan I, Carney HC, et al. **AAFP and ISFM feline environmental needs guidelines.** *J Feline Med Surg* 2013; 15: 219–230.
30 de Assis LS and Mills DS. **Introducing a controlled outdoor environment impacts positively in cat welfare and owner concerns: the use of a new feline welfare assessment tool.** *Front Vet Sci* 2021; 7. DOI: 10.3389/fvets.2020.599284.
31 Ramos D. **Common feline problem behaviors: aggression in multi-cat households.** *J Feline Med Surg* 2019; 21: 221–233.
32 Rochlitz I (ed). **Housing and welfare.** In: Rochlitz I (ed). The welfare of cats. Dordrecht, Netherlands: Springer, 2007, pp 177–203.
33 Ellis JJ, Stryhn H, Spears J, et al. **Environmental enrichment choices of shelter cats.** *Behav Processes* 2017; 141: 291–296.
34 Carlstead K, Brown JL and Strawn W. **Behavioral and physiological correlates of stress in laboratory cats.** *Appl Anim Behav Sci* 1993; 38: 143–158.
35 Kry K and Casey R. **The effect of hiding enrichment on stress levels and behaviour of domestic cats (*Felis sylvestris catus*) in a shelter setting and the implications for adoption potential.** *Anim Welf* 2007; 16: 375–383.
36 Vinke CM, Godijn LM and van der Leij WJR. **Will a hiding box provide stress reduction for shelter cats?** *Appl Anim Behav Sci* 2014; 160: 86–93.
37 Stella JL and Croney CC. **Environmental aspects of domestic cat care and management: implications for cat welfare.** *Sci World J* 2016. DOI: 10.1155/2016/6296315.
38 Halls V. **Causes of stress and distress in the home environment.** In: Sparkes A and Ellis S (eds). ISFM guide to feline stress and health: managing negative emotions to improve feline health and wellbeing. Tisbury: International Cat Care, 2016, pp 104–112.
39 Ramos D, Reche-Junior A, Luzia Fragoso P, et al. **A case-controlled comparison of behavioural arousal levels in urine spraying and latrining cats.** *Animals (Basel)* 2020; 10: 117. DOI: 10.3390/ani10010117.
40 Wilson C, Bain M, DePorter T, et al. **Owner observations regarding cat scratching behavior: an internet-based survey.** *J Feline Med Surg* 2016; 18: 791–797.
41 Grigg EK and Kogan LR. **Associations between laser light pointer play and repetitive behaviors in companion cats: does participant recruitment method matter?** *J Appl Anim Welf Sci* 2024; 27: 250–265.
42 Turner DC and Stammbach-Geering K. **Owner-assessment and the ethology of human-cat relationships.** In: Burger IH (ed). Proceedings of the 20th Waltham Symposium. Pets, benefits and practice. London: BVA Publications, 1990, pp 25–30.
43 DePorter T. **Intercat aggression.** In: Horwitz DF (ed). Blackwell's five-minute veterinary consult clinical companion: canine and feline behavior. 2nd ed. Hoboken, NJ: Wiley-Blackwell, 2018, pp 172–188.
44 Ellis S. **Recognising and assessing feline emotions during the consultation: history, body language and behaviour.** *J Feline Med Surg* 2018; 20: 445–456.
45 American College of Veterinary Behaviorists. Decoding your cat: The ultimate experts explain common cat behaviors and reveal how to prevent or change unwanted ones. New York: HMH, 2020.
46 Pachel CL. **Intercat aggression: restoring harmony in the home: a guide for practitioners.** *Vet Clin North Am Small Anim Pract* 2014; 44: 565–579.
47 Seksel K. **Fear, aggression, communication, body language and social relationships in cats.** *Eur J Comp Anim Pract* 2014; 24: 20–27.
48 Heath S. **Intercat conflict.** In: Rodan I and Heath S (eds). Feline behavioral health and welfare. St Louis, MO: Elsevier, 2015, pp 357–373.
49 Strickler B and Shull EA. **An owner survey of toys, activities, and behavior problems in indoor cats.** *J Vet Behav* 2014; 9: 207–214.

50 Crowell-Davis S, Curtis TM and Knowles RJ. **Social organization in the cat: a modern understanding.** *J Feline Med Surg* 2004; 6: 19–28.
51 Curtis TM, Knowles RJ and Crowell-Davis S. **Influence of familiarity and relatedness on proximity and allogrooming in domestic cats (*Felis catus*).** *Am J Vet Res* 2003; 64: 1151–1154.
52 Vitale K, Frank D, Conroy J, et al. **Cat foster program outcomes: behavior, stress, and cat–human interaction.** *Animals (Basel)* 2022; 12. DOI: 10.3390/ani12172166.
53 Mills D, Dube MB and Zulch H. Stress and pheromonatherapy in small animal clinical behaviour. Hoboken, NJ: Wiley, 2013.
54 Mills D. **Clinical animal behaviour: paradigms, problems and practice.** *Animals (Basel)* 2022; 12. DOI: 10.3390/ani12223103.
55 DePorter T, Bledsoe D, Beck A, et al. **Evaluation of the efficacy of an appeasing pheromone diffuser product vs placebo for management of feline aggression in multi-cat households: a pilot study.** *J Feline Med Surg* 2019; 214: 293–305.
56 De Jaeger X , Meppiel L, Endersby, S, et al. **An initial open-label study of a novel pheromone complex for use in cats.** *Open J Vet* 2021; 11: 105–116.
57 McPeake K, Sparkes A, Billy C, et al. **Development of a Cat Behaviour Issues Assessment Scale (CABIAS) assessing problem behaviours in cats.** *Animals (Basel)* 2023; 13. DOI: 10.3390/ani13182992.
58 Gorman M and Trowbridge B. **The role of odor in the social lives of carnivores.** In: Carnivore behavior, ecology, and evolution. Boston, MA: Springer, 1989, pp 57–88.
59 Metz D, Medam T, and Masson S. **Double-blind, placebo-controlled trial of venlafaxine to treat behavioural disorders in cats: a pilot study**. *J Feline Med Surg* 2022; 24: 539–549.
60 Crowell-Davis SL, Murray TF and de Souza Dantas LM. **Anti-convulsants and mood stabilizers.** In: Veterinary psychopharmacology. 2nd ed. Hoboken, NJ: Wiley-Blackwell, 2019, pp 147–156.
61 Horwitz DF and Mills DS (eds). BSAVA manual of canine and feline behavioural medicine. 2nd ed. Quedgeley: British Small Animal Veterinary Association, 2010.
62 Pflaum K and Bennett S. **Investigation of the use of venlafaxine for treatment of refractory misdirected play and impulse-control aggression in a cat: a case report.** *J Vet Behav* 2021; 42: 22–25.
63 Plumb DC. Plumb's veterinary drug handbook: pocket. 8th ed. Hoboken, NJ: John Wiley & Sons, 2015.
64 Seksel K, Ley J and Landsberg G. **Behavioral therapeutics.** Chapter 17. In: Little S (ed). The cat: clinical medicine and management. 2nd ed. St Louis, MO: Elsevier Saunders, 2024.
65 Crowell-Davis SL, Murray TF and de Souza Dantas LM. Veterinary psychopharmacology. 2nd ed. Hoboken, NJ: Wiley-Blackwell, 2019.
66 Denenberg S and Dubé MB. **Tools for managing feline problem behaviours: psychoactive medications.** *J Feline Med Surg* 2018; 20: 1034–1045.
67 Tynes V and Landsberg G. **Nutritional management of behavior and brain disorders in dogs and cats.** *Vet Clin North Am Small Anim Pract* 2021; 51: 711–727.

Appendix: cat cases

The following case studies are from the 2018 feline behavioral caseload of Daniela Ramos, Co-Chair of the Guidelines Task Force, working in Brazil. Of a total of 49 cases seen during the year, 17 (34.7%) involved intercat tension, which represented the main behavior complaint by caregivers.

General approach

The multi-cat households involved were evaluated and monitored in terms of cat-to-cat interactions (affiliative and agonistic), emotions, wellbeing of the cats involved, and the risk of injury to both cats and their caregivers. Decisions were made on an individual household basis about whether to keep cats separated during treatment and the use of psychotherapeutic medication. General management performed in all cases involved the following: addressing feline environmental needs (ie, the five pillars of a healthy multi-cat environment); use of feline synthetic pheromones (Feliway Friends and Feliway Optimum were not available in Brazil in that time, so Feliway Classic was used in some cases, although a few caregivers purchased Feliway Friends from abroad); suspension of any discipline-based training that had been applied by the caregiver; and reintegration sessions (ie, reintroduction if cats were separated and group sessions if they were not) to encourage acceptable behaviors by the cats in each other's presence.

The multi-cat households

Of the 17 households experiencing intercat tension, there were:

- *Two households (11.8%) in which intercat tension was relatively infrequent (ie, occurred a few times a week) and not intense.* Agonistic behaviors, including staring, hissing, avoiding and blocking, were observed occasionally when the cats met, but there were no severe episodes of physical conflict. All cats were considered to be coping well and were allowed to roam freely in their home. Management was conducted until intercat tension resolved or decreased to minimal levels, which took a few weeks in one household and 2 months in the other. Neither separation nor medication was necessary for any cat. One of the two cases is described in box A on page 30.
- *Five households (29.4%) in which intercat tension was very frequent (agonistic behaviors observed several times a day) but not intense.* Agonism was usually seen when the cats met, but severe episodes of physical conflict never took place. In most cases, the cats were considered able to cope with the tension and were allowed to roam freely in the house. Intermittent separation was recommended if cats struggled to deal with tensions. Management was carried out until intercat tension decreased to minimal levels or resolved, which took from a few weeks to 14 months, dependent on the household. Separation was not recommended in any of the cases, but two cats were treated with medication. One of the five cases is described in box B on page 30.
- *Ten households (58.8%) in which intercat tension was very frequent and very intense*, with the cats involved being kept separated to prevent severe physical conflict. Overt agonistic behaviors were characterized by chasing, swatting, biting and physical conflict whenever the cats encountered each other. Management took from 2–24 months, with success being achieved in six households (ie, cats reintegrated and intercat tension declined to minimal levels or resolved). In the remaining four households, treatment was discontinued by the caregivers (two of whom were injured during the reintegration process, which led them to abandon therapy). In one case, a cat was adopted into a new home; in the other three cases, the cats were kept permanently separated. One of the 10 cases is described in box C on page 30.

Appendix (continued)

Box A: Intercat tension – relatively infrequent, not intense

The cats (two females, both neutered) were in a two-cat household. One of the cats chased and bit the other cat during an episode of frustration and redirected agonistic behavior triggered by a neighboring cat who could be seen by them from the garden. Prior to this, the resident cats had lived well together, showing frequent affiliative behaviors (allorubbing and play). Tensions triggered by neighborhood cats had arisen previously, but had spontaneously resolved almost immediately without the need for further action by the caregiver. After the last episode, however, tensions rose. On several occasions, one of the resident cats growled at the other, who in turn hissed, ran away and hid. Both cats showed protective emotions (fear–anxiety), particularly in the vicinity of where they saw the neighboring cat.

General management (described on page 29) was performed. Additionally, the caregiver was advised not to allow the resident cats into the garden during late afternoons when neighborhood cats were around. By the end of the 2-month treatment period, the cats showed no tension and had resumed their previous affiliative behaviors.

Box B: Intercat tension – very frequent, not intense

A household of eight cats (three females and five males, all neutered) was created when the caregivers, who had previously lived separately, set up home together. Understanding the need to go slowly when integrating the cats, they had initially kept the two groups separated and then gradually introduced them, with the help of feline synthetic pheromones. After a few weeks the cats had been allowed to roam freely in the house. Although there was no overt physical conflict, one of the female cats was repeatedly on the receiving end of agonistic behaviors from three of the cats. She kept herself hidden most of the time, and would hiss and freeze (fear–anxiety response) when she saw the other cats. Two of the three cats would chase her (play–predation behaviors – ie, desire-seeking), while the third cat showed repelling behaviors toward her (ie, high intensity fear–anxiety behavior).

General management (described on page 29) was performed, and medication (buspirone) was administered to the fearful cat. Additionally, regular separation of the cats, in the form of exclusive access by the female cat to the caregivers' bedroom at night-time, was provided. After 10 months, all cats were living freely in the home and signs of intercat tension were rare. The female cat was medicated for about 18 months, before being weaned from the medication.

Box C: Intercat tension – very frequent, very intense

Intercat tension in a three-cat household (one female and two males, all neutered) had been triggered when one of the males had been introduced as a newcomer. During initial attempts to introduce the cat, the caregiver had allowed all the cats to roam freely within the house at all times. The resident male cat had kept trying to get close to and explore the newcomer (ie, engaging behaviors) but his inquisitive manner had led to protective behaviors (fear–anxiety) in the newcomer. These behaviors continued for a few days, resulting in increased frustration in both cats and intensified tensions including physical conflict. The other resident cat (the female) displayed fear, as evidenced by avoidance behavior whenever near the newcomer, but the two never fought. The caregiver's attempts to reintegrate the cats were unsuccessful and, because physical conflict was increasing, the newcomer cat was separated from the others until the behavior consultation took place.

After 4 months of general management (described on page 29) the cats were living freely with no tensions observed. No medication was used. The two resident cats showed toleration toward the newcomer (neither affiliative nor agonistic behaviors) and resumed affiliative behaviors between themselves.

What these studies demonstrate

Cases of intercat tension seen by board-certified veterinary behaviorists are commonly severe, requiring separation of the cats involved, but improvement or resolution can often be achieved. Tension commonly involves newcomer cats or resident cats who experience triggers such as exposure to outdoor (neighborhood, stray or feral) cats. Agonistic behavior can also be provoked by physical, social or behavioral changes associated with illness in a resident cat. Reintegration of cats, particularly those who are prone to physical conflict, can be a lengthy process and there is a high risk of injury to the cats and people involved, which caregivers need to be aware of. Ultimately, considerable caregiver patience and commitment to following the prescribed steps is required, and psychotherapeutic medications may be needed. In some cases, it may not be possible for multiple cats to continue to live together in the same home.

Available with additional resources at catvets.com/tension

Article reuse guidelines: sagepub.co.uk/journals-permissions

