Human-Directed Feline Aggression

Wailani Sung, MS, PhD, DVM, DACVB
Joybound People and Pets

AVMA: about **73.8 million pet cats in the U.S. in 2024**, living in about **42.1 million households** (roughly 32% of all U.S. households).

- Approximately 40% of owned cats display problem behaviors

Behavior Problems:

- Erode the Human Animal Bond
- Shelter relinquishment
- Euthanasia

Genetic Effect on Aggression

There is a strong **paternal effect** on human-directed defensive aggression.

- Kittens sired by socially friendly fathers exhibit significantly lower defensive aggression and greater friendliness toward both familiar and unfamiliar people

The combination of friendly paternity and early human handling:

- highest level of adult sociability and approachability toward strangers

Breed Effect on Aggression

Turkish Van
- highest levels of human-directed aggression, stranger-directed aggression, and conspecific (cat-to-cat) aggression.

Bengal, **Angora**, **Siamese**, and **Maine Coon**
- elevated levels of aggression towards humans and other cats

British Shorthair, **Persian**, and **Tonkinese**
- lower in human-directed aggression and higher in sociability

Housecats
- exhibited higher rates of human-directed aggression compared to purebred pedigree populations

Vapalahti et al. (2016) (Frontiers in Veterinary Science) & Salonen et al. (2019, 2021) (Scientific Reports)
Wilhelmy et al. (2016) (Journal of Veterinary Behavior) & Menor-Campos et al. (2024) (Journal of Veterinary Behavior)
Marchei et al. (2009) (Physiology & Behavior) & Salonen et al. (2019)
O'Hanley (2025) (PhD Dissertation, University of Guelph)

Sex and Reproductive Status

Female cats (particularly intact females)
- show higher rates of stranger- or owner-directed aggression
- elevated fear responses compared to males

Intact cats were rated by owners as significantly more aggressive towards family members and strangers compared to neutered ats

Feuerstein & Terkel (2008) (Applied Animal Behaviour Science) & Menor-Campos et al. (2024):
Pongrácz et al. (2025):

Coat Color and Pattern

Sex-Linked Orange Gene: Female cats carrying the sex-linked orange gene (**calico, tortoiseshell, and torbie**)
- significantly higher aggression score for human-directed aggression
- lower tolerance of handling compared to females with other coat colors.

Other Color Patterns:
Higher frequencies of aggressive behavior reported in
- **black-and-white** male cats
- **grey-and-white** male cats
- **tabby-patterned** cats.

Delgado et al. (2012) (Anthrozoös): owners more frequently perceived tricolor and tortoiseshell cats as aloof, intolerant, or aggressive

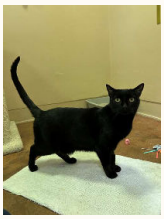
Stelow et al. (2016) (Journal of Applied Animal Welfare Science)
Stelow et al. (2016) & Pongrácz et al. (2025) (Applied Animal Behaviour Science)
Delgado et al. (2012) (Anthrozoös)

Sex and Reproductive Status

Female cats (particularly intact females)
- show higher rates of stranger- or owner-directed aggression
- elevated fear responses compared to males

Intact cats were rated by owners as significantly more aggressive towards family members and strangers compared to neutered ats

Feuerstein & Terkel (2008) (Applied Animal Behaviour Science) & Menor-Campos et al. (2024): Pongrácz et al. (2025):





READING THE CAT

Body Language

EYES Pupils dilated?
BODY Stiff or loose & relaxed
PAWS Tucked in?
TAIL Relaxed or lashing back and forth
EARS Forward or turned to the side
FUR Piloerection?

What's happening?



What's happening?



Missed Communication

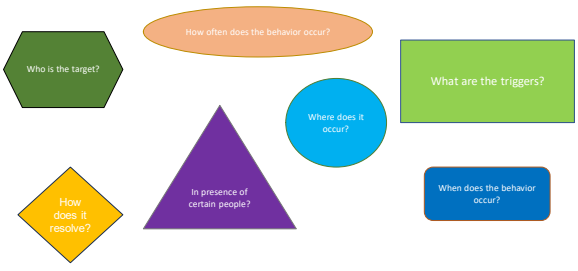
Untrained cat owners display high accuracy when identifying overt, severe signs of fear or aggression:

- hissing
- swatting
- growling
- dilated pupils
- a crouched body
- rapid tail swishing
- ears pinned flat against the head

Untrained owners have difficulty detecting subtle, early warning cues:

- lip licking
- freezing
- slow movements
- subtle head lowering
- sideways-positioned ears

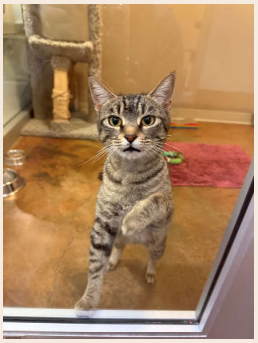
Taking a Behavior History



FELINE BEHAVIOR

Types of Human Directed Aggression

Fear
Arousal
Play Redirected
Territorial
Pain-induced



HUMAN DIRECTED AGGRESSION

Fear aggression

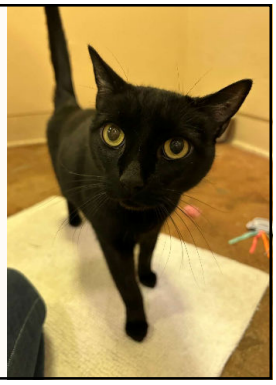
- Feels threatened
- Behaviors usually exhibited prior to aggression
  - Dilated pupils
  - Crouching
  - Pulling ears to the side or back
  - Vocalizations – growl, hiss



HUMAN DIRECTED AGGRESSION

Arousal related Aggression

- Overstimulation/Excitement
- Petting intolerance
- Frustration



HUMAN DIRECTED AGGRESSION

Play Aggression

- Batting, jumping, wrestling, chasing, stalking and biting



HUMAN DIRECTED AGGRESSION

Redirected Aggression

A cat becomes highly aroused by:

- Loud startling noise
- Another cat or animal
- Familiar or unfamiliar person

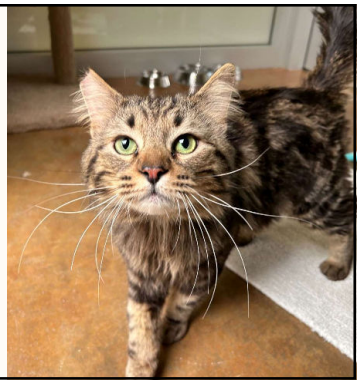
Redirects their aggression towards the closest person



HUMAN DIRECTED AGGRESSION

Territorial Aggression

- Visitors to the house



HUMAN DIRECTED AGGRESSION

Pain induced aggression

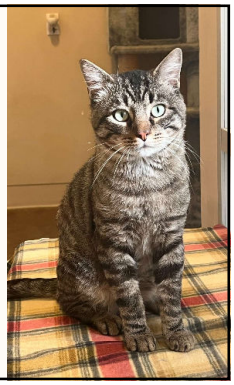
- The cat that has an injury or medical illness that causes discomfort when touched or handled
- Can be directed to both familiar or unfamiliar people



RULE-OUTS

Medical Conditions that increase Aggression

Pain • Injury • Osteoarthritis • Otitis externa • Dermatitis • Dental disease
Endocrinopathies • Diabetes mellitus • Hyperthyroidism
Neurologic: Seizures, Hyperesthesia, Cognitive dysfunction
Gastrointestinal disease • Food allergies • Inflammatory Bowel Disease



Behavior Analysis Approach

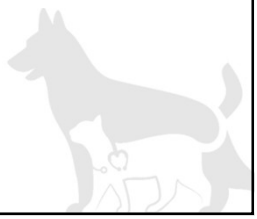
ANTECEDENT
Visitor enters the house

BEHAVIOR
Visitor reaches towards the cat

CONSEQUENCES
Cat hisses, scratches and bites the visitor and they leave. The cat learns to exhibit aggressive behavior towards visitors when they want them to leave.

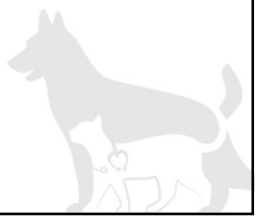
IMPORTANT FACTORS TO IDENTIFY

Trigger
Frequency
Motivation
Intensity
Recovery



Treatment

1. Management
2. Training & Behavior Modification
3. Nutraceuticals/Psychoactive Medication



Management

AVOID TRIGGER(S)
Direct eye contact · Quick movements · Reaching hands

DISTRACTION & REDIRECTION
Reinforce appropriate behaviors

SAFETY FOR CATS
Hides/perches for cats

SAFETY FOR PEOPLE
Physical barriers · Blankets, towels, pillows
Belled collar

Meeting Basic Needs

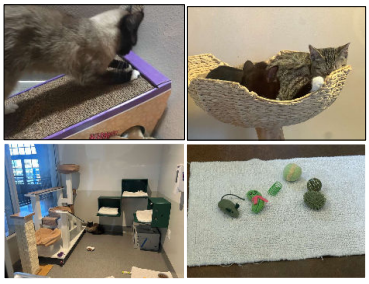
HYGIENE Clean litter box daily & Large litter boxes
FOOD Multiple small meals throughout the day
HIDES Provide multiple safe spaces to hide
FUN Interactive and food puzzle toys

Foster Affiliative Behavior

"CAT" Guidelines
- **C**hoice
- **A**ttention
- **T**ouch limited to facial regions

Consent test
- Pet and pause every 3-5 seconds
- Wait to see if cat initiates additional contact
- Helps to stay under threshold

Environmental Enrichment



- Large variety of toys
- Multiple perches and/or cat trees
- Scratching substrate
- Multiple feeding stations




Appropriate Play




Food Enrichment




Avoid Punitive Methods

Avoid the use of physical punishment or harsh physical corrections.

Do not recommend spraying with water or flicking their nose.

These techniques can exacerbate the pet's behavior problem and can increase the pet's level of anxiety or aggression.

O'Hanley et al. (2021) found that the odds of cats exhibiting aggressive behavior directed towards people increased when the cats were held, the owners made a loud noise, used a verbal command, "No!", or avoided the cat.

O'Hanley KA, Pearl DL, Niel L. Risk factors for aggression in adult cats that were fostered through a shelter program as kittens. Appl Anim Behav Sci. 2021;236:105251. doi:10.1016/j.applanim.2021.105251

Training

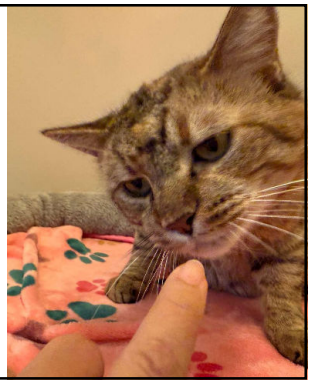




Behavior Modification

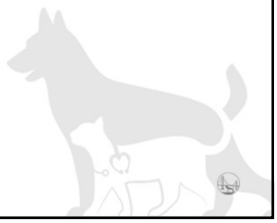
DESENSITIZATION & COUNTERCONDITIONING

- The cat is exposed to the trigger at a level that does not elicit fear or any other negative responses.
- Gradual exposure at a slow pace so that a negative response is not elicited.



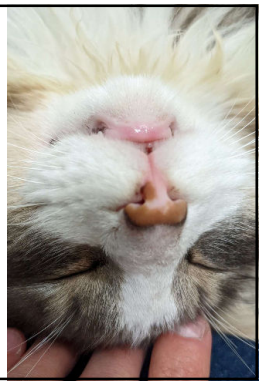
DSCC – Controlled Exposures

1 Gradual approaches towards the person
2 Person approaching the cat
3 Visitors entering the house
4 Being reached for/petted
5 Being handled



Counter-conditioning

Used to reverse previous negative emotional responses by associating that stimulus with a different, more desirable response
Use food rewards, petting, praise, toys or play session.



Natural Supplements



Gut-Brain-Axis

- Gut microflora can influence the stress circuitry in the brain.
- Use a Probiotic to improve mental and gastrointestinal health.
- Calming Care works through the Gut-Brain Axis to reduce anxiety
  - Bifidobacterium longum BL999
    - Serotonin receptors
    - Vagus nerve
    - Lower cortisol response to stressors



Zheng P, Zeng B, Zhou C, et al. Gut microbiome remodeling induces depressive-like behaviors through a pathway mediated by the host's metabolism. Mol Psychiatry. 2016;21(6):786-796. doi:10.1038/mp.2016.44

Pheromones

FELIWAY®

Original, Multi-Cat, Optimum

- Hiding
- Scratching
- Urine spraying
- Reaction to changes
- Tension and conflict between cats



Natural Supplements

ANXITANE L-Theanine Increases the concentration of GABA, serotonin and dopamine



ZYLKENE Alpha Casozepine Similar structure to gamma amino butyric acid (GABA) Affects GABA-B receptor - anxiolytic activity



SOLLIQUIN L-theanine & alpha lactalbumin, phellodendron amurense, magnolia officianalis Increases the concentration of GABA, serotonin and dopamine



Royal Canin SO Diet

• L-tryptophan • Milk protein – casein



Choosing a Psychoactive Medication

WHAT ARE YOU TRYING TO DO?

- Reduce the frequency of the behavior
- Reduce the intensity of the behavior
- Reduce the duration of the behavior
- Improved recovery period
- No/minimal side effects
- Improve the patient's and owner's quality of life

Other Considerations:

- No/minimal side effects
- Frequency of dosing
- Ease of administration

Short Acting Medications

Trazodone - Serotonin 2A antagonist, serotonin reuptake inhibition	50 - 100 mg/CAT SID-BID 10.6 - 33.3 mg/kg PRN
Gabapentin - Alpha-2-Delta ligand; Anticonvulsant/Neuropathic Pain Analgesic	3 - 10 mg/kg BID-TID 5 - 20 mg/kg Situational
Pregabalin	FDA approved for Acute anxiety and fear associated with transportation and veterinary visits in cats. Bonqat: 5mg/kg 1-4mg/kg SID-BID

Side effects: sedation, lethargy, agitation, vomiting, diarrhea, changes in appetite, any other behavioral changes

Selective Serotonin Reuptake Inhibitor

- Blocks serotonin re-uptake at the presynaptic neurons
- May increase post-synaptic receptor sensitivity
- Some inhibition of hepatic enzymes and can elevate the blood levels of other drugs when used concurrently

Reconcile/Fluoxetine (Prozac)	Paroxetine (Paxil)	Sertraline (Zoloft)
0.5-1.5 mg/kg PO SID	0.5-1.5 mg/kg PO SID	0.5-1.5 mg/kg PO SID

Side Effects: sedation, lethargy, vomiting, diarrhea, constipation (paroxetine), agitation, decreased appetite, difficulty urinating

Tricyclic Antidepressant

Clomipramine
0.25-1.3 mg/kg PO SID

- Affects 5-HT, NE, ACh and histamine
- Most potent inhibitors of 5-HT uptake
- Metabolites are more potent inhibitors of NE uptake
- No antidote for toxicity

Side Effects: sedation, lethargy, vomiting, diarrhea, constipation, agitation, decreased appetite, increased thirst

Serotonin Norepinephrine Re-uptake Inhibitors

Venlafaxine (Effexor)
6.25mg/cat · 1.0-2.0 mg/kg PO SID

- Serotonergic effects occur at low doses
- Noradrenergic effects are progressively enhanced as the dose is increased
- Do not block α1-noradrenergic, histaminic or cholinergic receptors

Side Effects: sedation, depression, arousal, gastrointestinal disorders, tachycardia and hypertension

Summary

- Identify the underlying motivation for the aggressive behavior
- Provide client education about body language and management to increase safety
- Provide environmental modification and enrichment
- Training and behavior modification is important
- Use nutraceuticals & pharmaceuticals if needed

Thanks!

behaviorconsult@joybound.org
Facebook.com/BayAreaVetBehavior Twitter: @BayAreaVetBehavior Bluesky: @bayareavetbehavior.bsky.social



