

# Problem Prevention in Puppies and Kittens

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## Misconceptions

- ❑ They don't just "grow out of it"
- ❑ Animals do not have "inactive" or "hibernate" modes
- ❑ Dogs and cats are not gerbils – cages are not the answer to every problem.

## Successful prevention:

- ❑ Socialization
- ❑ Early training and good management
- ❑ Meeting the animal's physical and behavioral needs

## Overview

- ❑ Discuss core topics with owners
- ❑ Dispelling behavioral myths
- ❑ Teaching owners to learn to predict behavior
- ❑ Discuss breed functions and expectations

## Overview

- ❑ Implement management steps
- ❑ Begin early training
  - Don't wait until animal is an adolescent or adult!
- ❑ Using environmental corrections only when necessary

## Core Topics

- Basic learning theory and role of reinforcement
- Socialization
- Bite Inhibition
- Restraint and handling
- Basic cue response
- “Leadership”

## Socialization: What is it?

Graduated exposure to a variety of novel environmental stimuli in a *controlled manner* to affect a *positive experience* and increase social skills and adaptability.

## Why is it necessary?

## Socialization

- Sensitive periods:
  - Cats: 2-9 weeks
  - Dogs: 3-14 weeks

### **THIS IS A SKILL.**

Proficiency will decline if it is not maintained over time!!

## How is it done?

- Exposure to as many different novel stimuli as can be done safely.
- Any objects, environments, people or animals that the youngster may encounter as adult.

## How is it done?

- Give explicit instructions and demonstrations
- Controlled situation
- Positive experience

## Controlled Exposure

### How is it done?

- Damage control:  
coping with a  
potentially traumatic  
experience

## Good Management

- Means setting up the environment so the right behavior is easy and the wrong behavior is hard!

## Good Management

- Eliminate items animal can chew on
- Supervise animal at all times when out of confinement!
- What if it was a human infant?

## Management Tools: Environmental control

- Crates, X-pens
- Baby gates
- Tethers, leashes
- Umbilical cording

## “Baby” Proof the House!

- Crawl spaces, crevices
- Doorways or holes in screens
- Tall items → falls (kittens)
- Foreign bodies: buttons, ribbons, hair bands, shoes, improper toys, etc.
- Medications

# Housetraining

- ❑ 5 Rules for successful house training:
  - Numerous trips outside!
  - 100% supervision when not confined
  - Confinement during unsupervised times
  - Neutral interruption during inappropriate elimination
  - Positive reinforcement for eliminating outside

# Successful Litterbox Training

- ❑ Confine kitten to single room to start
- ❑ Put box in easily accessible location
- ❑ Make sure box is appropriate size for the kitten (and later, the bigger cat)
- ❑ Allow increasing amounts of freedom

# Successful Litterbox Training

- ❑ Adequate number of boxes
- ❑ Use fine grain scoopable unscented litter Scoop 1-2 times/day
- ❑ Change litter q 1-4 weeks
- ❑ Clean box with warm water and soap (avoid noxious cleaners such as bleach, pine based products, etc)

# Bite Inhibition

- ❑ Animals have **excellent** control over direction and pressure of their mouths (and claws, hooves, horns, etc.)
- ❑ Young animals need to learn how much is “too much”

# Bite Inhibition

- ❑ Highly associated with time with dam/queen and littermates.
- ❑ Early weaning (under 7 weeks) often leads to issues with bite inhibition and excessive mouthing

# Mouthing

- ❑ Direct to toys

- ❑ No play with body parts!
- ❑ Don't make  
an excessive issue of it

## Scratching

- ❑ NORMAL maintenance behavior
- ❑ Observed even in declawed cats

## Scratching Posts

- ❑ Body length or more
- ❑ Near resting areas or areas of high social significance (natural scratching areas)
- ❑ Sisal, carpet, long weave fabric, natural (tree stumps)

## Restraint and Handling

- ❑ Teaching “settle”
- ❑ Acclimating to handling body

## Leadership – not “Psycho Bipolar Owner”

- ❑ Establish family guidelines
- ❑ Always aim for calm and polite!!
- ❑ Defining appropriate techniques

## Provide appropriate outlets for normal behavior

You can't just STOP a behavior; you have to REPLACE it with something else

## Enrichment!!!!!!!!!!

## Exercise

- ❑ Physical and mental
- ❑ Play groups or play sessions

- Free running
- “Exercise games”:
  - Food tossing
  - Fetch
  - Lure pole

## Toys and Games

- Know what is appropriate and safe
- Chew toys vs. play toys
- Don’t assume animal knows which items are toys and which are not

## Resting Areas

- Make sure they have an appropriate place to get quality sleep

## Resting Areas: Cats

- Various heights
- Scattered throughout house
- Important in multicat households

# Behavioral Pharmacology

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## Antipsychotics

- Therapeutic effects: Dopamine 2 antagonism
  - Detachment to environment
  - General, global behavioral suppression
- Other effects:
  - Extrapyrmidal
  - Increases prolactin
  - Anti-muscarinic, -H1,  $\alpha$ 1

## Antipsychotics

- Limited use in small animals
  - Poor therapeutic effect
  - High side effect profile
- Phenothiazines:
  - Acepromazine
  - Chlorpromazine

## Antipsychotics: Acepromazine

- Advantages
  - Sedation
  - Long duration of effect
- Disadvantages:
  - Long duration of action (can be > 24 hrs)
  - Large individual variability in effect
  - Unpredictable behavior; hypotension
  - Poor anxiolytic effects

## Antipsychotics: Acepromazine

- Indications:
  - Combination with other anxiolytics when sedation is desirable
  - Example:
    - Phobias

- Veterinary exams/grooming
- Car travel
- Contraindications:
  - Other drugs with high sedative profile
  - Other hypotension inducing medications

## Benzodiazepines

- Positive allosteric modulator of the GABA-A receptor
  - Anxiolysis
  - Sedation/hypnosis (higher doses)
- Rapid oral absorption
- Highly protein bound; lipophilic
  - Readily crosses BBB

## Benzodiazepines

- Diazepam (Valium)
  - Dog: 0.1 – 2.0 mg/kg
  - Cat: 1-2 mg/cat
- Alprazolam (Xanax)
  - Dog: 0.04 – 0.1 mg/kg q 4-6 hrs
  - Cat: 0.12-0.25 mg/cat
- Clorazepate (Tranxene)
  - Dog: 0.5 -2 mg/kg
- Clonazepam (Klonopin)

## Benzodiazepines

- Advantages
  - Rapid onset of action
  - Short duration (3-5 hours in dogs)
  - Appetite stimulation
  - Relatively safe even at high doses
- Disadvantages
  - Disinhibition of behaviors
  - Liver disease in cats-- potentially fatal
  - Hyperexcitability or mania in some animals

## Benzodiazepines

- Indications:

- Intermittent, episodic anxiolysis
  - Separation distress
  - Noise phobias
  - Veterinary visits (in combo)
  - Nocturnal anxiety
- Profound generalized fear/neophobia
- Social anxiety or urine marking in cats
- Contraindications:
  - Aggression in dogs?
  - Food guarding
  - Impulsivity disorders esp mixed with aggression
  - Animals with hepatic disease or obesity (esp cats)

## Tricyclic Antidepressants

- Clomipramine (Clomicalm®)
  - 2-3 mg/kg BID
- Amitriptyline (Elavil)
  - 1-3 mg/kg BID
- Imipramine (Tofranil)

## TCAs

- Inhibit reuptake transporters for serotonin and norepinephrine
  - Degree of each varies with individual drug
- Have anticholinergic, antihistaminic and  $\alpha_1$  adrenergic blockade effects
- Rapid oral absorption
- High protein binding

## TCAs

- Advantages
  - Generally inexpensive
  - Sedation
  - Antihistaminic effects (amitriptyline)
- Disadvantages
  - Sedation
  - Bitter taste (cats don't like!)
  - Clomicalm -- \$\$
    - Generic – limited dosing options
  - Avoid in geriatric animals or heart disease

## TCAs

- Disadvantages/Side effects:
  - GIT upset; constipation
  - Urinary retention
  - Dry mouth
  - Orthostatic hypotension
  - Cardiac arrhythmia

## TCAs -- Indications

- Dogs
  - Fears/phobias
  - Compulsive disorders (clomipramine)
  - Incontinence (imipramine)
  - Anxiety with vomiting as component
  - Some cases of aggression (clomipramine)
  
- Cats
  - Urine marking (clomipramine)
  - Pruritic conditions with stereotypic components
  - Intercat aggression (clomipramine)

## Selective Serotonin Reuptake Inhibitors

- Fluoxetine (Reconcile®)
  - Dog: 1-2 mg/kg QD
  - Cat: 0.5 – 1.0 mg/kg QD
- Paroxetine (Paxil)
  - Dog: 0.5 – 1.0 mg/kg QD
  - Cat: 0.25 – 1.0 mg/kg QD
- Sertraline (Zoloft)
  - Dog: 1-3 mg/kg QD
  - Cat: 0.5 – 1.0 mg/kg QD
- Citalopram (Celexa)

## SSRIs

- Inhibit serotonin reuptake transporters
  - Each drug has other more minor effects
- Activates 5HT<sub>1A</sub> autoreceptors; down-regulation of these = increased 5HT release at the terminal

## SSRIs

- Good oral absorption
- Lipophilic

- High protein binding (80-95% in humans)
- Hepatic metabolism to active metabolites
  - Fluoxetine, paroxetine: CYP inhibitors

## SSRIs

- Advantages
  - Low incidence of side effects generally
  - Long history of use
  - Wide application
- Disadvantages
  - GI upset
  - Lower seizure threshold
  - Potential for increased anxiety/agitation or aggression
  - Do not use with Promeris or Preventic collars

## SSRIs -- Indications

- Dogs
  - Aggression
  - Separation distress
  - Fear/phobia/panic
  - Compulsive/stereotypic disorders
  - Impulse control disorders
- Cats
  - Urine marking/spraying
  - Intercat aggression
  - Compulsive/stereotypic disorders
  - Fear/anxiety

## Fluoxetine

- Advantages/Uses:
  - Longest half life of the class
  - Geriatric animals
  - Easy dosing (Reconcile)
- Contraindications:
  - Poor appetite/weight loss (most anorexiogenic of major SSRIs)
  - Concurrent CYP inhibitors

## Paroxetine

- Advantages/Uses
  - Most potent SRI
- Contraindications

- Geriatric animals
- Cats prone to constipation
- CYP inhibition

## Sertraline

- Advantages/Uses
  - Geriatric animals
  - Mild disorders
- Disadvantages
  - Lower potency
  - Dosing difficulties esp for small patients

## Bupirone

- Partial postsynaptic 5-HT<sub>1A</sub> agonist
- Full presynaptic 5HT1A agonist
- Acts as full agonist in 5HT deficient states

## Bupirone

- Short half life
- High first pass effect
- High protein binding
- Hepatic metabolism but no CYP interactions
- Dog: 1 -2 mg/kg BID
- Cat: 0.5 – 1.0 mg/kg BID

## Bupirone

- Advantages
  - Low incidence of side effects
  - Few drug interactions
  - Generally little to no sedation
- Disadvantages
  - BID dosing
  - Can be \$ for dogs
  - Post pill agitation in cats

## Bupirone -- Indications

- Dogs
  - Mild anxieties esp social
  - Combination therapy with TCA or SSRI

- Cats
  - Intercat aggression – Victim only!
  - Urine marking/spraying

## Monoamine Oxidase Inhibitors

- 2 forms of MAO:
  - MAO-A: 5HT, NE, DA, tyramine
  - MAO-B: DA, phenylethylamine

## MAOIs -- Selegiline (Anipryl®)

- Non-competitive, irreversible inhibitor of MAO-B
  - DA and phenylethylamine
  - Non-selective at high doses
  - Increases DA in brain
  - Also has 5HT and NE reuptake properties
  - Antioxidant and free radical scavenging

## Selegiline

- Dog and Cat: 0.5 -1.0 mg/kg QD
- Bioavailability 10% in dogs (n=4)
- Side Effects:
  - Vomiting, diarrhea, anorexia
  - Stereotypic behavior
  - Agitation, hyperactivity, restlessness
  - Drug interactions

## Selegiline

- Indications:
  - Cognitive Dysfunction
  - "Depression"
  - Stereotypic/compulsive disorders (Europe)
  - Anxieties?
- Contraindications:
  - Concurrent use with other drugs enhancing monoamines or meperidine
  - Hypertension

## Trazodone

- Atypical antidepressant
- Weak serotonin reuptake inhibition; potent 5HT<sub>2A</sub> antagonist
  - H<sub>1</sub> blockade
  - α<sub>1</sub> antagonism
- Dog: 1-5 mg/kg BID
- Cat: 1 mg/kg BID

## Trazodone

- Advantages
  - Sedation
  - Longer action than benzodiazepines
  - Can be given as needed or daily
- Disadvantages
  - Sedation
  - GI upset (uncommon)
  - Rare agitation/irritability

## Trazadone

- Therapeutic indications
  - Storm/noise phobia esp combo therapy
  - Adjunct for anxieties

## Trazodone -- Indications

- Dogs and Cats
  - Noise phobia
  - Separation distress
  - Nocturnal restlessness
  - Car travel
  - Surgical recovery

## Stimulants

- Methylphenidate (Ritalin)
  - Dog: 0.5 – 1.0 mg/kg q8-12 hrs
- d-amphetamine (Adderall)
- DA agonists and DA reuptake inhibition
  - Some NE reuptake inhibition
- Side effects:
  - Hyperactivity, restlessness, agitation
  - Stereotypic behaviors
  - Hyperthermia

- aggression

## Stimulants

- Indications:
  - Tx of true hyperkinesia in dogs
- Contraindications:
  - Safety measures must be in place before testing
  - Risk of abuse

## Pheromones: Feliway

- Synthetic analogue of F3 fraction of facial pheromone
- Used to encourage facial marking vs. urine marking
- May also function as mild anxiolytic

## Pheromones: DAP

- Dog Appeasing Pheromone
- Calming effect; reducing stress
- Designed for anxiety disorders

## Pheromones

- Indications:
  - Aggression
  - Separation distress
  - Noise phobia
  - Car travel
  - General excitability
- Contraindications:
  - None

## S-adenosylmethionine

- Antioxidant; free radical scavenger
- Mild inhibition of MAO-B
- Increases turnover of 5HT, NE, DA
- May increase receptor sensitivity
- Exact MAO for mental illness unknown

## SAMe

- Indications:
  - Mild fear/anxiety
  - Cognitive dysfunction
  - Prophylaxis for brain aging
- Contraindications:
  - Concurrent selegiline use?

## Progestins

- Medroxyprogesterone
- Megestrol Acetate (Ovaban)
- Previously used 1° for aggression and inappropriate urination
- Significant side effects
- Currently not recommended for therapeutic use – salvage drugs