Fear
- Emotional response to a stimulus that is perceived as potentially harmful
- Adaptive – allows animal to avoid dangerous situations
- Results in physiological and behavioral stress responses
- Example
  - Increased heart rate, escape response, etc. when nearby tree is struck by lightening
  - Normal

Phobia
- Profound, persistent, and excessive (disproportional to the actual threat)
- Can generalize to other stimuli
- Maladaptive – interferes with normal functioning
- Often resistant to desensitization
- Results in physiological and behavioral stress responses
  - Extreme anxiety, increased heart rate, escape response, etc. when skies become cloudy
  - Abnormal

Anxiety
- Generalized feeling of apprehension in anticipation of a negative outcome
  - Emotional response to a stimulus that predicts a potentially harmful environment
- Physiological and behavioral responses
- Often slow onset and long lasting
- Considered abnormal

Stress response
- Physiological and behavioral responses to fears, phobias, and anxiety
- Adaptive – allows animal to respond quickly
- SAM system: release of epinephrine and norepinephrine
- HPA axis: cortisol release
Behavioral response
- FIGHT – defensive aggression
- FLIGHT – escape / avoidance
- FREEZE – anxious anticipation
- FIDGET – displacement behavior (if unable to avoid stimulus)
- Lowered posture
- Ears back
- Tail tucked
- Lip licking
- Yawning
- Shaking
- Hissing

Neuroanatomy
- Amygdala
  - Small almond-shaped structure deep within temporal lobe of brain
  - Considered the emotional brain center
    - Processes external and internal fear-evoking or potentially threatening stimuli
- Hippocampus
  - Major nucleus of limbic system involved in memory storage
  - Synapses with amygdala and hypothalamus
  - Memories can trigger amygdala and fear response

Fear Extinction
- Progressive reduction of fear response to a stimulus (no adverse consequences occur)
- Original fear conditioning pathway still intact
- New learning opposes original pathway

Bottom Line
- Good news
  - Memories are labile and fear response can be modified
- Bad news
  - Fear conditioning tends to “win”
  - Extinction will reverse over time
  - Poor generalization: stimuli presentation in different context suppresses extinction
Treatment of Fears & Phobias

- Identify triggers (visual, auditory, etc.)
- Identify threshold levels
- Avoid exposure to fear-provoking stimuli
- Ignore fearful behavior (don’t reward or punish)
- Countercondition: change association with fear-provoking stimuli

Treatment Overview

- Counterconditioning
  - Change animal’s (emotional) response to stimuli by associating the stimuli with rewards
  - Making a new response (not “un-learning”)

- Classical conditioning
  - Pair (associate) fear-producing stimuli with rewards so that stimuli signal something pleasurable

- Response substitution (differential reinforcement)
  - Ask animal to perform behavior incompatible with fear response; use special rewards

- Systematic desensitization
  - Step by step process of weakening an unwanted response
  - Controlled exposure to stimuli at intensity levels low enough not to elicit fear response

- Head halter
- Pheromones – Adaptil™ (collar)
- Diet / Nutraceuticals
  - Royal Canin® Calm™ diet (L-tryptophan and alpha-casozepine)
  - Solliquin® – L-theanine, Magnolia and Phellodendron extract, whey protein concentrate

- Maintenance medication
  - Give every day
  - SSRI, TCA, buspirone

- PRN medication
  - Short-acting, give before fearful event
  - Trazodone (SARI), clonidine (α2 agonist), benzos (diazepam, alprazolam, clonazepam)
Noise Phobia
- Clinical signs
  - Panting/salivation
  - Pacing
  - Vocalization
  - Eliminations
  - Destruction
  - Escape / avoidance
- Identify sounds and threshold volume
- Record noise for training
- Avoid or control stimuli (block sound, isolate dog, etc.)
- Counterconditioning, desensitization, and response substitution
  - Gradually increase intensity of stimulus
  - Always stay below threshold for fear

Sileo®
- SILEO® (dexmedetomidine oromucosal gel)
- FDA-approved for the treatment of canine noise aversion
- Selective α₂ adrenergic agonist
  - Prevents NE release

Thunderstorm Phobia
- Can be very difficult to treat
- Potential associated triggers (CS)
  - Static charge
  - Barometric pressure
  - Lightning
  - Rain / wind
- CDs for desensitization
  - Sounds Scary
  - Electrifying Thunderstorms
- During storm
  - “Safe haven” – allow dog to hide during storm
  - White noise – fan, classical music (“Through A Dog’s Ear”)
- During storm
  - Thundershirt™
- Storm Defender™
- Anxiety Wrap®
- Calming Cap™ / ThunderCap
- Adaptil™
- Mutt Muffs®

**Medications**

- Maintenance therapy
- SSRI, TCA, buspirone
- PRN therapy (dose 30-60 min before storm)
  - Benzodiazepines – appropriate if recover quickly after storm has ended
  - Trazodone (SARI)
  - Clonidine (α₂ agonist)
- Sileo (α₂ agonist)

---

**Fear of People**

- Specific person
- Unfamiliar people
- Children
- People in uniforms, etc.
- Gender (male > female)

**Treatment:**

- Identify and avoid person(s) evoking fear response (e.g., unfamiliar men)
- Identify distance threshold for eliciting fear
- Develop gradient of stimuli from least to most fearful
  - E.g., familiar woman → unfamiliar woman → familiar boy → unfamiliar boy → familiar man → unfamiliar man
- **Counterconditioning / desensitization (CC/DS)**
  - Ensure adequate control (e.g., head halter)
  - Start with least fearful stimulus (e.g., familiar woman) below threshold distance (e.g., > 20’)
  - Response substitution (e.g., ask dog to sit)
  - Associate person(s) with desirable things (e.g., treats)
  - Gradually increase level of intensity – but always stay below threshold for fear
Fear of Places
- Identify fear-producing stimuli
- Identify threshold level, then bring dog close to that distance (without triggering fear response)
- **CC/DS with response substitution**
  - Reward for obeying basic commands while gradually decreasing distance (*always staying below threshold for fear response*)

Fear of Vet Clinic
- “Happy visits”
  - Bring to clinic and progress through process of exam, stopping at point animal starts to become stressed
- **Desensitization / counterconditioning**
  - In car in parking lot → outside car in parking lot → waiting room → exam room → staff approach → staff touch → exam/procedure
- Proper handling! (Sophia Yin’s book)

Proper Equipment
- Food!
  - Experiment with different types and note in file
- Gentle Leader® or other head halter
- Restraint
  - Basket muzzles
  - Towels
  - E-collars, Air Muzzle Restraint®
- Removable-top carriers for cats

Fear of Car
- Avoid car rides unless training
- **CC/DS**
  - ID threshold
  - Work through progression of entering car and driving:
Dog outside car with door open → enter car → turn on engine → put car in gear
  − Stop when early signs of stress

- Confinement – crate, seat belt, Gentle Leader®, Calming Cap™
- May be helpful to have both driver and trainer
- PRN medications
- Adaptil™ collar
- Rule out nausea!

Separation Anxiety
- Recurrent distress associated with the absence or perceived absence of an attachment figure
- Second most common complaint in behavior specialty practice
- Re-homed / shelter dogs
- Mixed breed > Purebred
- Geriatric dogs
- Often triggered by
  - Change in household
  - Change in schedule

Clinical Signs
- Begin before or just after owner leaves
- Destruction – digging, scratching, chewing
- Vocalization
- Urination / defecation
- Panting, salivating

“Velcro Dogs”
- Often hyper-attached to one or more family members
- Become anxious when recognize departure cues
- Exuberant greetings upon return
Diagnosis

- Destruction, vocalization, elimination, etc. occur only when the dog is alone
- Rule out medical problems
- Video!
- Video!
- Video!
- Audio OK too

Differentials

- Incomplete housebreaking
- Confinement anxiety / barrier frustration
- Aggression
- Reaction to noises (outside, rodents)
- Destructiveness / exploration

Treatment

- **Independence training:**
  - Environmental changes
  - Behavior modification
  - Pharmaceuticals
- Avoid triggers that can be controlled
- Pet sitters
- Doggie daycare
- Dog walker
- Car

- **Independence training**
  - Remove dog (gradually) from bedroom at night
  - Reward only relaxed, independent behavior
  - Structured interactions – ignore attention-seeking (Leadership Protocol)
  - “Down-stay” – gradually increase time until dog can calmly stay while owner leaves the room for 10 minutes
- Behavior Modification – **Downplay departure and arrival**
  - Make transition from owner’s presence to their absence less pronounced
  - Give long-lasting food treat ~10 minutes before leaving and quietly depart
**Graduated departures**
- Dog in “down-stay”:
  - Walk to door, touch doorknob
  - Open and shut door
  - Open door, walk outside for 1 sec, then … 3 sec,… 10 sec,… 1 min,… 5 min,… 20 min
  - Do not proceed to next step (or increase time outside) unless dog can remain calm

  - Very time-consuming; frustrating for owner

- Training versus real departure

- Make situations very different
  - Crate vs. loose
  - Leave different doors
  - Distinct “safety cue” for training

- When can be alone during training for ~20 min, change real departure to training context
- Use special rewards (food / toys) for training and actual departures

**Confinement**
- Confinement anxiety / barrier frustration
- Often comorbidity in dogs with separation anxiety
- Best to get dog out of crate
- Safe tethering
- Not always realistic

**Enrichment**
- Physical and mental stimulation to engage dog in appropriate behaviors

**Medications (maintenance)**
- FDA approved:
  - Clomicalm® (clomipramine)
  - Reconcile® (fluoxetine)

- Other SRRIs, TCAs
- Maintenance – every day
- May take up to 6 weeks for effect
Medications (PRN)

- Benzodiazepines
  - Diazepam (~2-4 hrs)
  - Alprazolam (~4-6 hrs)
  - Clonazepam (~6-8 hrs)

- Trazodone (~12 hr)
- Clonidine (~12 hr)

Give 60-90 min. before departure (to avoid “wind-up” anxiety)
- Test dose (watch for paradoxical effects)

Adjunct Treatments

- Dog-appeasing pheromone – Adaptil™
- Wraps – Anxiety Wrap®, Thundershirt™, ace bandage, t-shirt
- Royal Canin® Calm™ diet – L-tryptophan and alpha-casozepine (dogs < 33 lb.)
- Solliquin® – L-theanine, Magnolia and Phellodendron extract, whey protein concentrate
- Purina® Pro Plan® Calming Care Supplement
- Harmonease® Chewable Tablets – flower essences

When to medicate?

- Early!
- Dogs are panicking
- Can help prevent dysregulation of stress response and escalation of anxiety