Stress and Welfare
How Stress Influences Dog Behavior

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Agenda
Assessing Stress
Stress and…
Animal Shelters
Personality
Welfare
Adoptions

Stress
How Stress is Sabotaging your Dog Adoption Efforts

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Signs of Stress

Physiologic Signs of Stress

Stress as a bodily response

The sympathomedullary pathway

Hypothalamus activates the adrenal medulla

Adrenal medulla (controlled by the ANS) releases adrenaline & noradrenaline into the bloodstream

Body prepares for “fight or flight” Adrenaline & noradrenaline reinforces the pattern of sympathetic activation e.g. increased heart rate & blood pressure etc.

Energy

Hypothalamus

Pituitary gland

Adrenal gland

Adrenal cortex

Higher brain centres activate hypothalamus

Hypothalamus releases corticotrophin (CRF)

Pituitary gland releases adrenocorticotrophic (ACTH)

Adrenal cortex releases corticosteroids

Corticosteroids causes changes- liver releases energy & the immune system is suppressed
Physiologic Signs of Stress

**Fight or Flight Response**

- Skin: blood vessels constrict; chills & sweating
- Heart: beat faster & harder
- Stomach: parasympathetic enzymes decrease
- Muscles: become more tense; trembling can occur
- Saliva: flow decreases
- Eyes: pupil dilate
- Lungs: quick, deep breathing occur
- Bowel: food movement slows down
- Blood vessels: blood pressure increases; major vessels dilate

Acute vs. Chronic Stress

**Attacked by a dog (Stressor)**

- More cautious interaction with dogs
- Distance increasing behaviors (e.g., growl)
- Panics and attempts to flee every time he sees other dog
- Attacks other dogs

**Types of Stress Response**

- Recovery/Adaptive response
- Worsening stress and Maladaptive response
### Stress, Shelters, Personality

<table>
<thead>
<tr>
<th>Stressors that don’t go away</th>
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<tbody>
<tr>
<td>Separation from family</td>
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<tr>
<td>Disruption of routine</td>
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<tr>
<td>Bad smells</td>
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<tr>
<td>Loud noises</td>
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<tr>
<td>Confined living conditions</td>
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<tr>
<td>Other stressed pets</td>
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<td>Inconsistent and/or poorly controlled temperatures</td>
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### Why Are They So Stressed?

<table>
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<tr>
<th>Lack of Control</th>
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<td>Aggressive dogs</td>
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<tr>
<td>Diet change</td>
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<tr>
<td>Lack of social contact</td>
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<tr>
<td>Inability to maintain housetraining</td>
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<tr>
<td>Uncomfortable living conditions</td>
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<tr>
<td>Other stressed pets</td>
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<tr>
<td>Separation from home</td>
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<tr>
<td>Inability to maintain normal sleep/wake cycles</td>
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**Maddie’s Fund**

**What Happens When They Can’t Recover?**

Stressors that don’t go away

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**Maddie’s Fund**

**Stress, Shelters, Personality**

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**Maddie’s Fund**

**Why Are They So Stressed?**

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Complicated Stress Response

- Environmental stressors (work, home, neighborhood)
- Major life events
- Trauma, abuse

- Perceived stress
  - threat, helplessness, vigilance

- Behavioral responses
  - flight or flight
  - personal behavior - diet, smoking, drinking, exercise

- Physiologic responses
- Allostasis
- Adaptation
- Allostatic load

Adaptive Response

- Environmental stressors (work, home, neighborhood)
- Major life events
- Trauma, abuse

- Perceived stress
  - threat, helplessness, vigilance
  - Shelter Stay

- Behavioral responses
  - flight or flight
  - personal behavior - diet, smoking, drinking, exercise

- Physiologic responses
- Allostasis
- Adaptation
- Recovery
- Allostatic load

Chronic Stress – Loss of Coping Mechanisms

- Environmental stressors (work, home, neighborhood)
- Major life events
- Trauma, abuse

- Perceived stress
  - threat, helplessness, vigilance
  - Long-term Shelter Stay

- Behavioral responses
  - flight or flight
  - personal behavior - diet, smoking, drinking, exercise

- Physiologic responses
- Attention seeking behavior, barking
- Anxiety
- Allostasis
- Adaptation
- Stress Overload
- Allostatic load
There is no ‘if,’ there is only ‘how’
How Stress is Sabotaging your Dog Adoption Efforts

Stress and Welfare

It’s Stressful to Learn About Stress!

The stress-brain loop

chronic stress

- inadequate sleep
- poor nutrition
- emotional distress

increases glucocorticoids

decreased regulation of cortisol

- attention
- perception
- short-term memory
- learning
- word finding

cellular changes in the hippocampus

Behavior Problems are Exacerbated by Stress

Aggression (all types)
Separation anxiety
Destructive behavior
Barking
Fear
Inappropriate elimination
Urine marking
Compulsive behavior
Sociability
Excitability
How Stress is Sabotaging your Dog Adoption Efforts

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**Length of Stay and Quality of Life**

*Stress*

- Poor Quality of Life
- Unappealing Behavior
- Increased Time Spent in Shelter

*Shelter Medicine for Veterinarians. Second Edition. Chapter 7; Quality of Life, Stress, and Emotional Pain in Shelter Animals, Dr. Frank D. McMillan*

**Welfare**

Balance between positive and negative experiences

- Bad
- Good

**Roo's Story**

*Images of a dog in various poses*

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Evaluating a Population of Dogs

Welfare Assessment Protocol for Shelter Dogs


Is experiencing stress worthwhile, if it results in saving a life?

What Can We Do to Help?
How Stress is Sabotaging your Dog Adoption Efforts

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What Can We Do to Help?

Basic care
Structured environment/routine
Reduce noise
Enrichment
Foster care
Adoption!!!
Medication

Thank You!
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