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CANINE ENRICHMENT: STRESS REDUCTION FOR HAPPY AND HEALTHY SHELTER DOGS

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Outline

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- **What is Environmental Enrichment?**
- Goals of Application
- Measuring Success of Implementation
- Stress in the Shelter
- Enrichment Applied to Shelters
 - The Research
 - Real Life Application

What is Environmental Enrichment?

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- Definition:
 - Add some "factor" to environment to improve animal's welfare
 - Physical and/ or psychological standpoint
 - Usually already impoverished or barren environment
 - Modification or intervention to impact physical activity, social interactions, environmental design or management and husbandry
 - Goal: improve the behavioral health or environment of captive animal

Ellis et al. J Fel Int Med Surg 2009

What is Environmental Enrichment?

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- Modification often focus on the environment itself and the basic resources needed
 - Food, water, shelter or elimination
 - Activating the animal's five senses
 - Increasing physical activity
 - Adding social interactions with conspecifics and/ or other species



What is Environmental Enrichment?

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- Association of Shelter Veterinarians Guidelines for Standards of Care in Animal Shelters
 - Definition: Process for improving environment and behavioral care of confined animals within context of their behavioral needs
 - Purpose: Reduce stress and improve well-being
 - Physical and mental stimulation
 - Encourage species-typical behaviors
 - Allow animals more control over environment

<http://www.shelternet.org/wp-content/uploads/2011/08/Shelter-Standards-Oct2011-wForward.pdf>

What is Environmental Enrichment?

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- Trend to label as “environmental **needs**”
 - Implies required for behavioral and physical health and adequate welfare
 - Should be offered to every pet
 - Not only when signs of poor health already present
 - Addressed quickly when deficits noted
 - Goal: Maintain behavioral health
 - Prevent unwanted behaviors

AAFP IFMS Feline Environmental Needs Guidelines catvet.com

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Goals of Application

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- Define or classify environmental enrichment by the goal of the application
 - ▣ Increasing behavioral diversity
 - ▣ Increasing expression of normal species typical behavior
 - ▣ Decreasing abnormal behavior
 - ▣ Increase positive use of available environment
- More than just increasing motor activity now

Ellis et al. J Fel Int Med Surg 2009

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Measuring Success of Implementation

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- Confirm that behavior changes result in actual welfare improvement
 - Five Freedoms
 - Freedom from Hunger and Thirst
 - Freedom from Discomfort*
 - Freedom from Pain, Injury or Disease
 - Freedom to Express Normal Behavior*
 - Freedom from Fear and Distress*

Farm Animal Welfare Council

Measuring Success of Implementation

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- Confirm that behavior changes result in actual welfare improvement
 - ID animal's emotional state as result of enrichment
 - Measure physiologic parameters
 - Monitor body language
 - Longer term evaluation
 - What normal behavior being stimulated
 - Does that change other associated behaviors, emotional states or activities?
 - Social interaction through fencing- can see but cannot touch- increase frustration because cannot complete sequence

AAFP IFMS Feline Environmental Needs Guidelines

Measuring Success of Implementation

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- Don't automatically assume rotation of all enrichments are beneficial
- Effect of rotation depends on:
 - Type of enrichment
 - Stress to animal when changing it
 - Effect of novelty and habituation on use
- Balance between too much rotation/ lack of control and barren environment with strict schedule

Measuring Success of Implementation

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- Lack of control in environment or inability to predict occurrence of stressors can be extremely stressful
 - ▣ Inconsistent or irregular interactions
 - ▣ Unfamiliar people or dogs
- Ability to predict occurrence of stressor can help animal return to lower stress state between events
- Definition (Assoc. Shelter Vet.)
 - ▣ Includes “allowing animals more control over their environment.”

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Stress in the Shelter

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- Signs of stress
 - ▣ Fear and anxiety
 - Withdrawn, curled up in back of kennel
 - Lack of interest in social interaction
 - ▣ Frustration
 - Motivated to perform a behavior without an appropriate outlet
 - ▣ Aggression
 - Result of fear and/ or frustration

Behavior Problems in Shelters

- ☐ Stress/ Anxiety
 - ☐ Fears
 - ☐ Fear aggression
 - ☐ Repetitive behaviors
 - Displacement
 - Stereotypic
 - Compulsive disorder
- ☐ Hyper-excitabile
 - ☐ Jumpy/ mouthy
 - ☐ Frustration



Kennel Stress

- ☐ Kennel stress considered when:
 - ☐ Increased barking, jumping and lunging at passersby; difficulty focusing during play & training
 - ☐ Hiding, trembling, cowering, or excessively drooling in current housing system
 - No history of this level of fear previous environments
 - ☐ Repetitive behaviors
 - Patterned pacing, circling, tail chasing, shadow chasing, stereotyped pouncing, other repeated behaviors

Fear vs. Anxiety

- ☐ Definitions:
 - ☐ Fear
 - ☐ Behavioral response to perceived **actual** danger
 - ☐ Goal to protect, get out of harm's way
 - ☐ Combination of behavioral and physiologic changes
 - Alarm reaction & resistance phase of stress
 - ☐ Anxiety
 - ☐ Reaction to a **potential** threat
 - ☐ Anticipation or worry
 - ☐ Can become maladaptive
 - Include exhaustion phase of stress



Boissey & Erhard, in: Gen & Behav Dom Anim

Fear

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- Flight
 - Run away, hide
- Fight
 - Often last resort
 - Cannot hide or cornered
 - Expensive
 - Defend oneself
 - Perceive life in danger



Fear

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- At Shelter:
 - In unfamiliar confined space
 - Unfamiliar dogs, cats and people around
 - Intense smells and sounds
 - Person/animal continues to approach despite trying to hide
- Which option will pet choose?



Frustration

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- Results in
 - High arousal, lack of impulse control
 - Jumping, mouthing
 - Acute conflict behaviors
 - Stereotypic behaviors
 - Cage biting
 - Aggression
 - Fence running, charging the kennel door
 - Very difficult to ignore some of these unwanted behaviors

Frustration

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- Animals at particular risk
 - Highly social dogs and cats
 - To people or conspecifics
 - Highly trainable breeds
 - Working breeds
 - German Shepherds
 - Other herding breeds- Aussie, Border collie, Sheltie
 - Rottweilers, Dobermans
 - Terriers
 - Including Pit bull terriers



Frustration

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- Highly trainable breeds
 - Learning by operant conditioning
 - Trial and error
 - Occurring all of the time, whether we want it to or not
- Law of Effect

Law of Effect

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- **Behavior** resulting in pleasant consequence **strengthened/** Increases in frequency
- **Behavior** resulting in **no consequence** is weakened
- **Behavior** resulting in **unpleasant consequence** **Weakened/** decreases in frequency
- *Interpretation of consequence based on **dog's** perception, not ours!*

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 - **Real Life Application**

Enrichment Applied to Shelters

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- **Role & Goal of Shelters**
 - Role: offer food, water and shelter for un-owned dogs
 - Goal: to find dogs new home as quickly as possible
 - Make shelter stay as short and stress-free as possible
 - Maintain physical and behavioral health

Enrichment Applied to Shelters

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- **Real life application strategies**
 - Consider application strategies in the context of cost of implementation, finances, manpower and time
 - Triage those dogs first in line
 - Longer term residents
 - Those most stressed, hiding, frustrated
 - Log activity and reaction
 - Send list of what dog likes home with new owner

Areas to Address

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- Environment
 - Size
 - Indoor/ outdoor
 - Bedding
- Learning
 - Safety
 - Life skills
 - Politeness/ Impulse control
 - Behavior modification
 - Job/ cool behaviors
- Social
 - Play
 - Quiet time
 - People
 - Dogs
- Senses
 - Sight
 - Hearing
 - Smell
 - Touch
 - Taste

Areas to Address

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- Environment
 - Housing
 - Size
 - Indoor/outdoor
 - Noise/ Light
 - Enrichment
 - Beds
 - Toys
- Social interaction
 - Conspecific interaction
 - Human interaction
- Exercise



Housing size, indoor/ outdoor

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- Dogs spent more time moving and less time in repetitive behaviors in larger pens
- Outdoor access
 - Associated with a decrease in stereotypy
 - Sometimes an increase in activity or pace
- By very nature, outdoor and/or group housing increases physical complexity of kennel environment

(Hughes & Campbell 1990; Hetts et al 1992; Hubrecht et al 1992; Beerda et al 1999)

Beds

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- Moving bed to front of cage made dog more likely to be at the front even though it's activity was not altered
 - May indirectly increase welfare by facilitating adoption
 - Visitors reported dogs at the front of cages to be more attractive than ones at the back
- Raised platforms were used by young dogs 55% of the time
 - After two months these dogs were rated as more confident, friendly and playful than previously

(Wells & Hepper 1992, 2000; Wells 1996; Hubrecht 1993)

Conspecific Social Interaction

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- Keeping dogs in groups
- Opportunity to satisfy biological need for physical exercise and social contact with conspecifics
 - Increased risk of behavioral abnormalities when housed singly
 - Particularly evident if isolated from a young age
 - More likely to circle repetitively, vocalize, and self groom
 - Almost complete absence of stereotypic behaviors reported in group-housed dogs

(Sonderregger & TuAn ;Thompson et al 1956; Fuller & Clark 1966; Scott 1980; Hubrecht et al 1992; Hubrecht 1993; Mertens & Unshelm 1996; Beerda et al 1999)

Conspecific Social Interaction

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- Group-housed shelter dogs:
 - More active, less aggressive, quicker to re-home
 - Showed fewer behavior problems in the new home
- Visual and auditory perception of conspecific without opportunity to physically interact can be very frustrating



(Mertens and Unshelm 1996 ; McAfee et al 2002; Mills & Davenport 2002)

Human Social Interaction

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- Presence of people can be both stimulating and calming
- Periods of human activity were correlated with increased dog activity and barking
 - Dogs more likely to stand near the front of the cage and bark during busy visiting periods

(Neamand et al 1975; Hughes et al 1989; Hetts et al 1992; Wells and Hepper 2000; Sales et al 1997; Ledger et al 1996)

Human Social Interaction

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- Human contact may decrease stress-related behavior and physiology
 - Mechanism to help kennelled dogs cope with stress
 - Petting can reduce heart rate, after an initial rise upon greeting



"Go home and let your dog lick your face. Dog saliva is the most effective antidepressant you can get without a prescription."

(McMillan 1999; Hennessey et al 1998; Lynch & Gantt 1968; Kostarczyk 1992)

Human Social Interaction


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- Visual access to people without physical access
 - Can be over-stimulating, facilitate barking and be source of frustration
- Visual access to people may be detrimental to the welfare of the dogs
 - particularly for fearful dogs in shelters during maintenance or visiting times
 - Not been fully explored

Play!

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- <http://www.maddiesfund.org/the-best-medicine-playing-with-shelter-dogs.htm>



Behavior Modification/ Training

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- Center for Shelter Dogs
 - <http://www.centerforshelterdogs.com/Home/DogBehavior/ProblemsandManagement.aspx>
- ASPCAPro
 - <http://aspcapro.org/behavior-enrichment>
- Maddie's Institute
 - <http://www.maddiesfund.org/topic-animal-behavior.htm>

Behavior Modification/ Training

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- Herron, Kirby-Madden, Lord. JAVMA 2014
 - Dogs receiving food toy and kennel side training showed more approaching the front, lying down, sitting and quiet behaviors when approached
- Luescher, Medlock. AABS 2009
 - Dogs that underwent training were 1.4 times more often adopted
 - Walk on a head halter, sit on cue, approach front of kennel, not jump when greeting

Enrichment Applied to Shelters

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- Social interaction with people
 - Positive reinforcement training sessions
 - Very social and easily frustrated dogs
 - Clicker training is ideally suited for this
 - Easy foundation behaviors:
 - Target object with nose, sit, give paw, go to place



Enrichment Applied to Shelters

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- Social interaction with people
 - Caregivers calm, quiet, patient, positive
 - Consistent schedule for caretakers
 - Calm handling with minimal low stress restraint
 - Interactions should not be forced
 - Visit, pet, play, train



Gourkow & Fraser Anim Welf 2006;
Rochlitz, The Welfare of Cats 2007

Book Buddies ARL Huffington Post

Areas to Address

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- Sight
- Hearing
- Smell
- Taste
- Touch

Light

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- Don't underestimate the power of a normal daily routine
- Highly stressful for lights to be on overnight or for lights not to be on during day chronically
 - ▣ Disrupts normal biorhythm
 - ICU psychosis/ delirium/ syndrome
- Lights should be turned off in evening and back on in morning

Sound

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- Don't underestimate the power of quiet
- Other barking dogs, clanging bowls and cleaning noise can be very stressful
- Sound dampening material in enclosures
- Quiet kennel exercises
- Music: (Wells, Graham, Hepper Animal Welfare 2002)
 - ▣ Type of music affected activity, position in kennel and vocalization
 - More time resting and less time standing with classical
 - More time barking with heavy metal

Smell


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- Pheromones
- Essential oil diffusion
- (Graham, Wells, Hepper Applied Animal Behaviour Science 2005)
 - ▣ Chamomile and Lavender
 - More time resting, less time moving, less vocalization
 - ▣ Rosemary and Peppermint
 - More standing, moving, vocalizing



Taste

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Maddie's Shelter Medicine Program at the University of Florida
June 10 at 10:46am · 📍
"Put the treats in the tiny jar and let him get them out, they said. It'll be 'enrichment,' they said"
#TransformingAnimalSheltering
#NoReallyItWillBeFun

Touch

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- Offer variety of toys
- Determine what pet likes to play with
 - ▣ Stays with that pet through shelter until ready to be replaced
 - ▣ If disinfectable, should be done between animals



www.petedge.com

Enrichment Applied to Shelters

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- Rotation schedules
 - ▣ Keep those items that the pets really love to interact with present at all times
- Rotate through toy variety
 - ▣ Log which toys/ enrichment each dog prefers
 - Send list home with new owner
- Scheduled times
 - ▣ Music, scent, quiet time, social interactions
- Make it fun for volunteers and dogs!

Enrichment Schedule

Time	Enrichment
Morning	Music time
Noon	Toy/ Object Time
Afternoon	Petting/ Training time (alternate with play?)
Evening	Quiet Time

Enrichment Schedule

Day	Enrichment
Sunday	Training Day
Monday	Food Toy Day
Tuesday	Play Group Day
Wednesday	Food Toy Day
Thursday	Aromatherapy Day
Friday	Food Toy Day
Saturday	Reading/ Massage Day

- Conclusions**
- Enrichment and environmental management should be offered to all dogs, not just those most visibly stressed.
 - Monitoring of physical and behavioral changes as a result of the enrichment should be part of enrichment plan.
 - Don't assume rotation of enrichment is always good.
 - Utilize the 5 senses, space management and social interactions for opportunities for enrichment.
 - Get creative! Enlist the help of staff and volunteers to come up with creative and inexpensive ways to offer enrichment.

Overall Conclusions

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- ❑ Enrichment can reduce stress
- ❑ Reduced stress reduces illness
 - ❑ Happy healthy dogs are more adoptable
- ❑ Need to be able to interpret body language in order to determine:
 - ❑ Emotional State
 - ❑ Motivation for undesired behavior
 - ❑ Those most in need of immediate intervention
 - ❑ Set up plan appropriate for behavior signs displayed
 - ❑ Evaluate response to plan implementation

Thank You for Your Time!

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