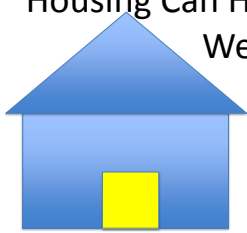


**A Fine House: How Shelter Housing Can Help Cats Stay Well**



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University of Wisconsin  
School of Veterinary Medicine

[www.sheltermedicine.com](http://www.sheltermedicine.com)  
[www.facebook.com/sheltermedicine](https://www.facebook.com/sheltermedicine)

Saving Lives and Stomping Out Disease!

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**OR**

**Fixing the Feline Housing Crisis:**



How Shelter Housing Can Make Cats Sick - And What You Can Do About It!!

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**Why URI and housing?**



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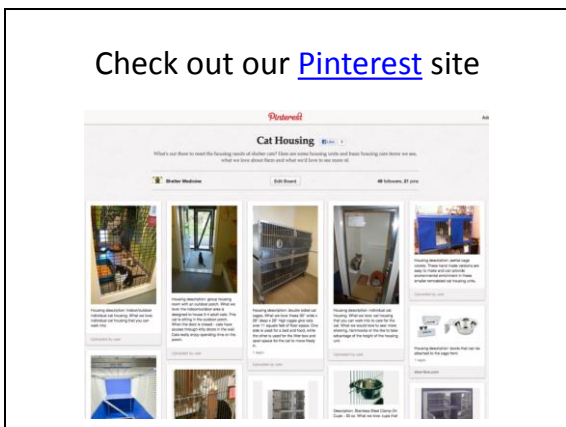
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- ### The Five Freedoms
- **Freedom from Hunger and Thirst** - by ready access to fresh water and diet to maintain health and vigor.
  - **Freedom from Discomfort** - by providing an appropriate environment including shelter and a comfortable resting area.
  - **Freedom from Pain, Injury or Disease** - by prevention or rapid diagnosis and treatment.
  - **Freedom to Express Normal Behavior** - by providing sufficient space, proper facilities and company of the animal's own kind.
  - **Freedom from Fear and Distress** - by ensuring conditions and treatment which avoid mental suffering.

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Stress reduction



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Natural behavior



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Enrichment



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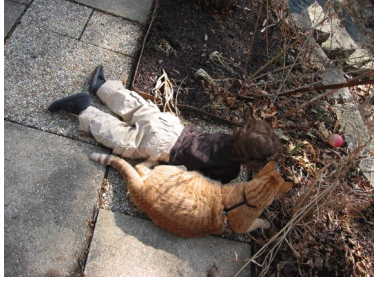
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Explore a safe environment



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Company of others



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Freedom from pain, injury, or disease



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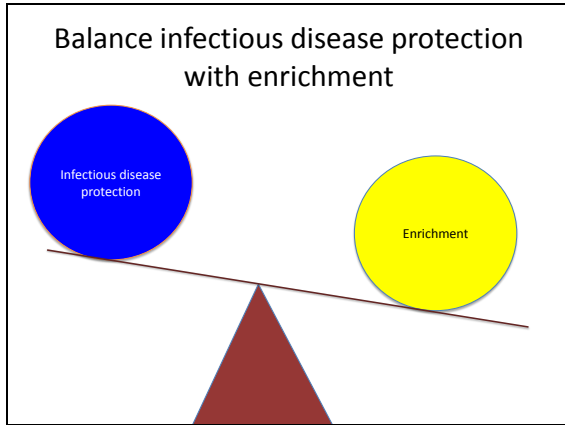
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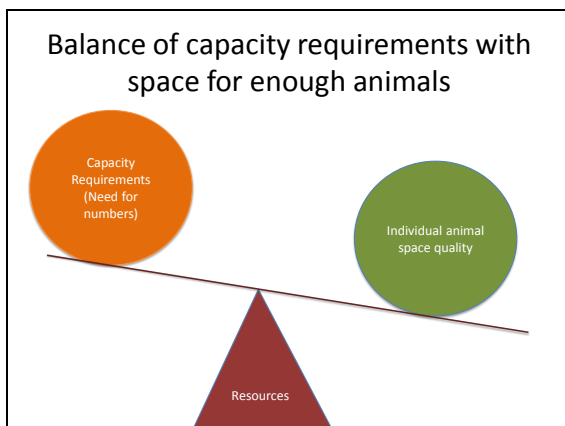
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### What really matters?

- Space quantity
- Space quality
- Separation for rest, food, elimination
- Enrichment
- Hiding places
- Elevation
- Limits on stressors
- Light
- Light cycles
- Predator / prey relationships
- Flexibility of space
- Cleaning
- Isolation / separation for sick animals
- Temperature
- Air quality
- Fresh air
- Noise
- Activity
- **Safety**

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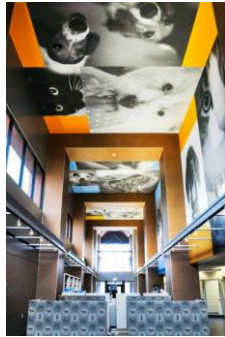
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### Appearances?



- Matters to adopters and funders
- So...
- Matters to animals
- Double points if beautiful appearances can also be functional

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### Planning for cleaning

- Double-sided runs with guillotine doors for dogs
- Double-sided cages for cats
- In the meantime, spot cleaning for cats



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### Spot cleaning

- Goal is to keep space pleasant for the animal with minimal disruption
- Commonly confused
- No spraying
- Leave bedding and other items in place whenever possible
- Special considerations for cats in small cages



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### Programmatic effects



- Walking programs
- Tricks training
- Feeding programs
- Reading
- Play and enrichment programs

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Space quantity

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Space quantity



- **Freedom to Express Normal Behavior** - by providing sufficient space, proper facilities and company of the animal's own kind.
- **Freedom from Fear and Distress** - by ensuring conditions and treatment which avoid mental suffering.

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### Primary Enclosure: Size

#### Normal postural adjustments

- Turn freely
- Stand easily
- Sit
- Stretch and extend their limbs
- Move their head, sit, and stand without ears touching the top of the enclosure
- Hold tail erect
- Posture comfortably for eating drinking, urination, and defecation




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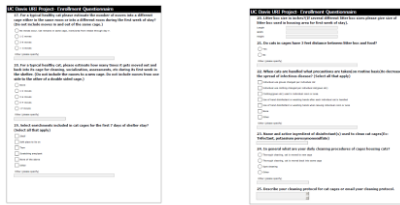
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### Environmental and Group Health Risk Factors for Feline Respiratory Disease in Animal Shelters



49 questions including cage size, material and number, hiding place, handling, infectious disease control, vaccination, feeding, timing of S/N, air quality, natural light, dog exposure

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### After all that, what mattered most?

all_uri_gtz	Robust		s	P<val	[95% Conf. Interval]	
	IRR	Std. Err.				
new_cifs_2	.8466349	.1243785	-1.13	0.257	.6248145	1.129134
new_cage_3	.6896932	.0298496	0.88	0.000	.3893386	.8233882
new_6d	.3275451	.1583542	-2.31	0.023	.1249998	.844875
ln_newal_civ	1.179544	.3084261	0.63	0.519	.7561595	1.946857
movement_1to	1.1891258	.0330839	0.04	0.000	1.1461976	2.036207
Intersect1_4	1.443807	.3018287	1.88	0.046	.9775741	2.132782
new_hc_2	1.050598	.4976885	0.10	0.917	.410151	2.456687
new_hc_3	.7985236	.2267483	-0.80	0.424	.4559162	1.391593
new_season_2	.722167	.0468721	-0.22	0.000	.6399302	.8201339
new_season_3	.7874888	.0896001	-2.10	0.036	.6300792	.9442234
new_season_4	.9176190	.1662131	-0.47	0.639	.446056	1.314318
Total_heal_4		(response)				

Greater than 9 square feet of floor space but not 6-8 compared to < 6  
 Limited movement in first 7 days  
 All large cages were compartmentalized

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### Allow human interaction



No hermetically sealed cats, please!

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### Don't fear the adopters!

- Think infectious dose
- Who is really the biggest risk for transmission?



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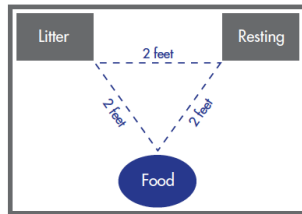
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### Elimination, feeding and resting areas



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### Primary enclosure: Layout



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### Separation



- What we love
- Two room sized compartments
- Bedroom bathroom suite
- Wheels to move for cleaning or rearranging

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### Housing unit options on the market



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### Runs for cats



Masonco.com

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### Housing affects other space needs



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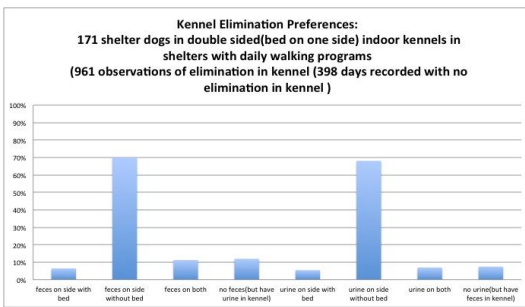
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### Surprised?



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### Opportunities for visual concealment



*“Hiding was negatively correlated with cortisol concentration and...may be an important behavior for coping with uncontrollable and unpredictable captive environments.”*

Carlstead K, Brown JL, Strawn W. Behavioral and physiological correlates of stress in laboratory cats. *Appl. Anim. Behav. Sci.* 1993;38:143-158.

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### Hiding places



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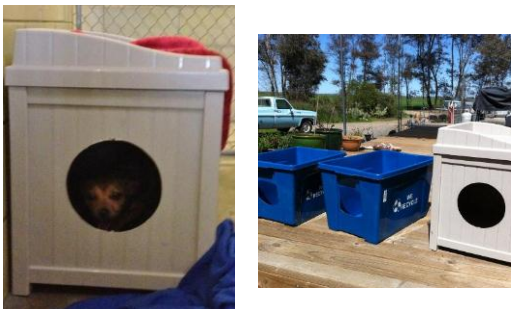
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### Expanded opportunities



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### Hiding boxes



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### Comfortable Resting Area



You can make these yourself! [www.sheltermedicine.com](http://www.sheltermedicine.com)

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### Group housing

**Freedom from Pain, Injury or Disease** - by prevention or rapid diagnosis and treatment.

**Freedom to Express Normal Behavior** - by providing sufficient space, proper facilities - **and** **company of the animal's own kind.**

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### Friends with benefits



- Always balance risks of exposure with benefits of socialization
- Monitoring considerations

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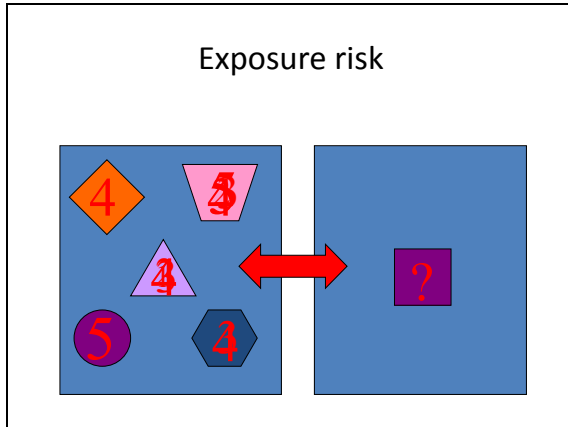
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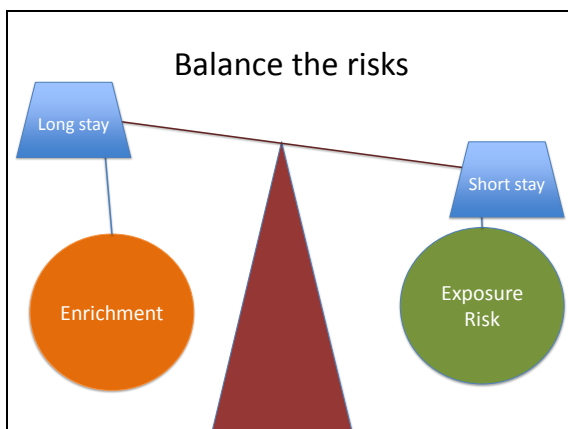
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### Separation / Isolation

- What kind of separation?
- Transmission type?
- Species differences
- How is transmission reduced?
- Separation alone is worth doing even if isolation cannot be achieved

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### Space flexibility

Holding

Adoption

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### Temperature



- Monitor individually to ensure comfort
- Ensure they can adequately maintain their body temperature
- Special considerations for babies
- Necessary measures must be taken to ensure animal comfort and safety

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### Air quality



- Minimize irritants
  - Spot clean, no spraying
  - Reduce dust and debris in the air
- Use fans after cleaning
- Open doors and windows
- Utilize outdoor space whenever possible

- Ventilate!
- Don't hang your hopes on air filters

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### Ventilation



\*Lago, A., McGuirk, S.M., Bennett, T.B., Cook, N.B., and K.V. Nordlund. 2006. Calf respiratory disease and pen microenvironments in naturally ventilated calf barns in winter. J Dairy Sci 89: 4014-4025.

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### Ventilation for sick animal areas



5-6 feet  
CATS

Droplets

20 feet  
DOGS

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Fresh air



Indoor / outdoor housing units

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Enrichment...

- Windows
- Bird feeders
- Playtime
- Rewards
- Reading programs
- Walking programs (for cats?)
- Work for a meal
- Just love

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### Elevation – Remember this?



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### Elevation



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### Light and light cycles

- Helps with monitoring
- Normal cycles of light and dark
- Daylight / Sunlight

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...and conversely  
Limits on stressors

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Dogs – Barking and otherwise

- Avoid exposure to dogs
  - “cats with high dog exposure had significantly higher urine cortisol...than cats with low dog exposure.”
  - McCobb EC, Patronek GJ, Marder A, et al. Assessment of stress levels among cats in four animal shelters. *JAVMA* 2005;226:548-555.

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Other Noise

- Barking
- Banging
- Water spraying
- Music
- Equipment

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### Cage moves

- “[herpes] virus re-excretion [was stimulated] in over 50% of...cats by the ‘stress’ situation of a change in housing.”
- Gaskell RM, Povey RC. Experimental induction of feline viral rhinotracheitis virus re- excretion in FVR-recovered cats. *Vet Rec.* 1977;100(7):128-133

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### Irregular caregiving

- Creates stress
- Missed expectations
- May cause increased exposure

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### What can you do now?

- Provide concealment
- Provide enrichment
- Train the dogs to keep quiet
- Switch over to spot cleaning
- Improve efficiency and drop LOS to increase “space”
- Make a plan for housing improvements!

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