
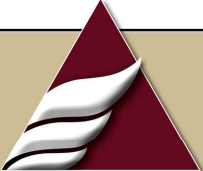


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Evaluation of pheromone collars in young MWDs transitioning from foster homes to the training kennel

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Purpose

- Reduce impact of an extreme stressor on young MWDs
 - “The Transition”
- Improve welfare, decrease anxiety, prevent behavioral, medical, and/or training issues
 - Increase focus, decrease medical down-time, enhance learning & memory
- Evaluate measures to reduce environmental stressors in an MWD kennel environment
- Maximize the potential of the DOD Puppy Program
 - Financial gain by lowering operational costs and attrition rates







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Canine Critical Periods

<ul style="list-style-type: none"> • Neonatal Stage (birth-13 days) <ul style="list-style-type: none"> – Early handling benefits • Transitional Stage (13-19 days) <ul style="list-style-type: none"> – Patterns of adult behavior and emotions • Socialization Period (19 days-12 weeks) <ul style="list-style-type: none"> – Behavioral and neurodevelopmental milestones (rapid learning) 	<ul style="list-style-type: none"> • Juvenile Period (12 weeks-sexual maturity) <ul style="list-style-type: none"> – Neuronal pruning – Reduction in learning rate • Adult Stage (6-7 months on) <ul style="list-style-type: none"> – Social maturation
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Background








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Effects of Stress on MWDs


Physiologic Effects	Psychological/ Behavioral Effects	Cognitive Effects
((Chronic Stress))- generalized weakness & depression-> fatigue and exercise intolerance	Hyperactivity, Hypo activity	Diminish ability to think/understand (training problems)
Colitis, recurrent GI upset	Negative conditioning- "bad manners"	Voice understanding (noise)
Immune suppression Heat stress	Distress, Destruction, Self-trauma	Physical exhaustion
Auditory threshold shifts	Compulsions	Mental exhaustion
Respiratory irritation	Aggression	Increased reactivity
Orthopedic instability	Depression	

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Stress Mitigation Measures

- Environmental management
 - Expensive
 - Time-consuming
 - Personnel requirement
- Behavior training
 - Time-consuming
 - Personnel requirement
- Training methods
 - Traditional versus New Age
- Personnel education
 - Canine communication & behavior
 - Husbandry
- Medication
 - Effect on olfaction?
 - Does it 'fix' the problem?
 - Does it address the problem?
- Supplements
 - Pheromones
 - Omega 3's
 - Nutrition





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Proposal


- Where to start?
- Non-invasive, personnel-independent, non-prescription, relatively inexpensive
- Previous studies
 - Reduction of fear and anxiety in puppies
 - Transitions between homes and to new homes
 - Learning, performance
 - Stressful environment







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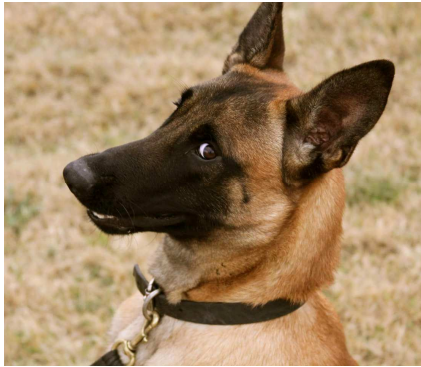




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Methods

- Double blinded, randomized, placebo-controlled
- Collar placed at time of turn-in from foster home (7 months)
 - 7 Litters from October 2014 through February 2015




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Methods


- 3 Behavior Assessments (Week 1, 3, and 5) by Behavior Resident
 - Collar removed Week 4
- 1 Performance Evaluation by Puppy Program Evaluator
 - Stability, Detection, Patrol
- Statistics:
 - Welch two sample t test
 - Preliminary data looking at the average behavioral scores and the change from the initial to the final scores
 - Follow-on analysis once all assessments complete





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Results





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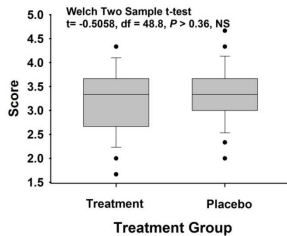




Results-Behavioral Assessments

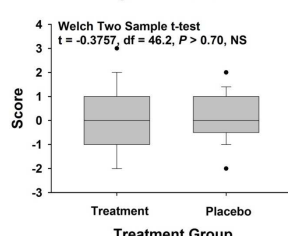
Average Distress Scores



Welch Two Sample t-test
 $t = -0.5058$, $df = 48.8$, $P > 0.36$, NS





Change in Distress Score

Welch Two Sample t-test
 $t = -0.3757$, $df = 46.2$, $P > 0.70$, NS



 						
Variable	Treatment Mean	Placebo Mean	Welch t	df	P	Sig.
Average Activity	3.268	3.519	-1.440	45.66	0.156	NS
Change in Activity	0.577	0.880	-1.230	36.14	0.226	NS
Average Focus	3.872	3.733	0.595	46.98	0.555	NS
Change in Focus	0.307	0.640	-0.910	48.99	0.367	NS
Average Distress	3.295	3.387	-0.506	48.80	0.615	NS
Change in Distress	-0.038	0.080	-0.376	46.17	0.709	NS
Average Affability	4.320	4.306	0.094	48.07	0.925	NS
Change in Affability	-0.154	0.000	-0.613	48.97	0.542	NS
Average Handling	3.654	3.694	-0.154	48.89	0.878	NS
Change in Handling	-0.683	0.732	0.070	47.50	0.945	NS

 						
<h3>Performance Evaluations</h3> <ul style="list-style-type: none"> • Preliminary look <ul style="list-style-type: none"> – Little variation in scoring – Objective sum score does not correlate with subjective Pass/Fail of evaluation or elimination from training 						
<div>14</div>						

Conclusion

- No significant correlations associated with pheromone collar at this time
- Personality likely a huge contributor
- Use of pheromone alone unlikely to combat the levels of stress endured
- Further research
 - Full-fledged behavioral program with environmental enrichment schedule and puppy socialization and integration program
 - Environmental stress reduction program
 - Genetic markers (DAT)
 - Modify selection and evaluation process



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Questions



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