Welcome to the fifth edition of Behavior News, the newsletter designed to keep veterinary staff and other animal handlers up to date on current behavior recommendations for companion animals. This season we continue our segment on low stress handling in small animals, as well as behavior changes in the aging pet. For additional resources on animal behavior at The Ohio State University, please visit: vet.osu.edu/Behavior and vet.osu.edu/CommunityPractice.

Behavior Changes in the Aging Pet: An Overview of Common Problems - Part 2
Meghan E. Herron, DVM, DACVB

In the last issue, we introduced common behavior changes and forms of sensory decline in aging patients. Keep in mind that cognitive decline is not considered a normal aging change, although its prevalence does increase with advanced age. Cognitive decline is an early form of cognitive dysfunction syndrome (CDS). Most of the cognitive aspects we utilize to assess for CDS can be summarize by the acronym D.I.S.H.A. continued on page 2

Behavior Textbook Review

Canine Behavior: A Photo Illustrated Guide by Barbara Handelman M.Ed, CDBC

Ever wonder what your dog is thinking? If so, this text offers one of the best interpretations of canine body language available. The forward by veterinary behaviorist Dr. Lore Haug sets this book apart from others in its class. It is a great recommendation for clients who are struggling to interpret their dog’s play behaviors, as well as indicators of distress and pending aggression. Remarkable photos throughout provide an excellent visual reference for uncovering the motivation behind various canine behaviors.
Behavior Changes in the Aging Pet - continued

D.I.S.H.A.
- Disorientation – changes in spatial awareness, loss of ability to navigate around familiar obstacles, wandering behavior.
- Interaction changes – decreased interest in social interactions, petting, greetings, dependent or “clingy” behaviors.
- Sleep/Wake cycle changes – restlessness or frequent waking during the night, nighttime panting or panic, increased sleep during daytime hours.
- House soiling – loss of signaling a need for elimination, indoor elimination, incontinence
- Activity level changes – decreased exploration and response to stimuli, decreased grooming, decreased appetite; increased anxiety, including restlessness, agitation, and/or separation distress that was not present earlier in life.

As discussed previously, cognitive dysfunction syndrome is a diagnosis of exclusion. Differential diagnoses for the above behavioral changes must be ruled out in order to make a definitive diagnosis of CDS. Differentials may include, but are not limited to, hyperadrenocorticism, parathyroid disorders, hypo/hyperthyroidism, diabetes mellitus, chronic kidney disease, neoplasia, cardiovascular disease, incontinence, hepatic disease, musculoskeletal disease, dental disease, prostatic disease, and sensory loss. Behavioral differential diagnoses may include the progression of a generalized anxiety disorder, separation anxiety, fear-related aggression, pain-related aggression, noise or storm phobias, lack of house training, attention-seeking behaviors, and compulsive disorders. Often there will be concurrent behavioral and medical diagnoses as medical and cognitive disorders may exacerbate existing, previously undiagnosed behavior problems.

To screen for potential signs of CDS, there are a number of behavioral checklists available. The Senior Pet Screening Checklist is a general senior health screening tool that is best offered to owners of all dogs over 10 and cats over 13. A technician can screen for “red flags” and if any are identified, the client can be prompted to fill out a more detailed CDS screening form called the Cognitive Dysfunction Screening Checklist. Another commonly used screening tool, more often used in European countries, is the ARCAD Scale - Age-related cognitive and affective disorders. All of these forms can be found on CD Rom in The Handbook of Behavior Problems of the Dog and Cat Landsberg, Hunthausen, Ackerman.

Treatment
There is no cure for cognitive dysfunction and the disease is progressive; however, therapies in the form of environmental enrichment, dietary change, nutraceutical products, and psychoactive drugs have been shown to delay progression and improve the associated behavioral signs. Any therapy found to be effective should be continued for life as long as there are no contraindications (hepatic or renal dysfunction, drug interactions, dietary intolerance, etc.).

Environmental Enrichment in the form of exercise, novel and interactive toys, and learning new tasks – “teach an old dog new tricks” – has been shown to improve learning and memory.

Diet change – Hill’s Prescription Diet b/d contains Vitamins E and C, the antioxidants beta carotene, selenium, alpha-lipoic acid, flavonoids and carotenoids from fruits and vegetables (spinach, tomatoes, grape pomace, carrot granules, and citrus pulp), L-carnitine to enhance mitochondrial function, and omega-3 fatty acids to promote cell membrane health. In clinical trials this diet alone significantly improved learning in old dogs. When combined with environmental enrichment these results were even greater. B/d is available for dogs only.

Nutraceutical products are now available for both dogs and cats:
- Senilife™ - phosphatidylserine, pyridoxine (vitamin B6), Gingko biloba, resveratrol, and vitamin E; Available for dogs and cats in the US.
- Neutricks™ – Apoaequorin. This is a calcium-binding protein shown to improve cognitive function in dogs and to have a neuroprotective effect. Available for dogs in the US.
- Aktivait® - phosphatidylserine, N-acetyl cysteine, alpha-lipoic acid, L-carnitine, co-enzyme Q10, EPA, DHA, vitamins C and E; Available for dogs in the UK.
- Proneurozone™ - vitamin E, many of the B vitamins, folic Acid, N-acetylcysteine, alpha-lipoic acid, fruit and herbal extracts such as grape seed, rosemary, sage, bilberry, choline, lecithin and fatty acids; Available for dogs and cats in the US.
- Geri-ACTIVE® - Gingko biloba, ginseng, bilberry and alpha-lipoic acid; Available for dogs and cats in Canada.
- Denosyl®/Denamarin® (SAMe) – free radical scavenger and helps maintain neurotransmitter function, including serotonin. CAUTION with use in combination with other serotonin enhancing drugs (i.e. SSRIs, TCAs, MAOIs); Available for dogs and cats in the US.
Behavior Changes in the Aging Pet - continued

Psychoactive drugs:

Anipryl® (selegiline) is a MAOB I (selective, irreversible inhibitor of monoamine oxidase B, an enzyme responsible for neurotransmitter deactivation). This medication has been through safety and efficacy trials in dogs and is approved for use in dogs for the treatment of CDS at a dose of: 0.5-1.0mg/kg once daily, typically given in the morning. The American Association of Feline Practitioners supports use of this medication in cats at a dose of 0.25-1.0mg/kg once daily. Anipryl enhances release and availability of neurotransmitters, increases levels and promotes transmission of dopamine, inhibits neurotoxic metabolites, and activates superoxide dismutase to scavenge free radicals. This medication should be used with CAUTION with excess cheese in the diet as some dogs may show MAO A inhibition which reduces tyramine metabolism and may lead to hypertension. There are a number of serotonin, dopamine, and norepinephrine enhancing drugs/products that cannot be used concurrently with Anipryl, including:

• Amitraz dips, ProMeris®, Preventic® collar
• Tramadol, meperidine and other opiates/opioids
• ReconcileTM, Clomicalm® (any SSRI or TCA)
• Ephedrine, amphetamines, alpha 2 agonists
• Phenothiazines (acepromazine)
• Proin (PPA) should be safe in healthy dogs at therapeutic doses, but important to monitor blood pressure closely.

Benzodiazepines (with or without concurrent Anipryl® use) may be used to control nighttime restlessness/waking signs. A long-acting benzodiazepine that does not have active liver metabolites and, therefore, may be safer in geriatric pets or those with potential liver compromise is oxazepam 0.04-0.5mg/kg at bedtime. Lorazepam (Ativan) at 0.1-0.5mg/kg is another long-acting benzodiazepine with no active liver metabolites and is readily available at human pharmacies. Remember to use CAUTION with any oral benzodiazepine in cats as acute hepatocellular necrosis has been reported with oral diazepam use! Tolerance may develop and withdrawal is possible with abrupt discontinuation with daily use of any benzodiazepine.

Fitergol® (Nicergoline) is an alpha-1 and alpha-2 agonist approved for use in dogs in Europe and has been used anecdotally in cats. This medication increases cerebral blood flow, is neuroprotective, scavenges free radicals, and increases appetite.

Prognosis

A study done at UC Davis found that forty-eight percent of dogs 11-14 years old showing signs of impairment in one behavioral category develop impairment in two or more categories within 6-18 months without treatment. Clinical trials have shown improvement in existing behavioral signs of CDS and delay of onset of additional signs over placebo with Anipryl, Fitergol, Hill’s Prescription b/d diet, environmental enrichment, and several nutraceutical products. If treatment can be implemented early, the prognosis for a better quality end-of-life is greatly improved.
Low-Stress Animal Handling—Part 3

T. Shreyer, MA, C. Croney Ph.D., M. Herron, DVM, DACVB

Effective low stress handling (LSH) starts long before you ever actually touch your patient. The more relaxed, comfortable and “safe” our patients feel just prior to being restrained, exposed to medical tools, or having actual medical procedures performed on them, the more cooperative they will be. We’ve developed a quick check list to help you promote a high level of perceived safety by your patients, and create a safer, more time efficient, lower stress interaction for everyone involved.

1. Assess the Environment

Make the Environment Comfortable for the Patient

- Remove known triggers of fear or aggression for your patient (ex. dogs, men, cats, noise).
- Decrease stimuli (ex. light, noise, movement, touch).
- Create an exam site without slippery, shiny, cold surfaces (try www.comfortpetexam.com, or yoga mats).
- Provide a way for fearful pets to hide or feel covered and protected (ex. cats can stay tucked under a towel down inside their carrier that has had the lid gently removed).
- Be sure you have all the supplies and equipment needed to work quickly and effectively once the examination begins. Avoid restraining animals multiple times.
- Provide Pheromones (ex. DAP or Feliway - feliway.com).
- Mindfully manipulate whether the owner is present. Many do better when allowed to stay together.
- Utilize food for distraction and counter-conditioning when safe.

2. Assess the Animal

Monitor your patient’s comfort level by tracking body language throughout your entire interaction.

We have developed an abbreviated way of categorizing and communicating about our patients’ body postures that has been very effective with our team:

- **Green** - the patient feels safe
- **Yellow** - the patient perceives danger
- **Red** - the patient perceives deadly threat

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**Signs of a RELAXED dog**

- **Posture:** relaxed, weight carried evenly, may see play bow or body “wiggles”
- **Tail:** relaxed & neutral position, may be wagging
- **Ears:** Relaxed, neutral position
- **Mouth:** appears “soft”, may be open, tongue hanging out; mouth may be closed with lips relaxed over teeth
- **Eyes:** “soft”, relaxed, eyebrows neutral, normal pupil size, steady, relaxed gaze

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**Signs of a defensibly threatening dog**

- **Body Posture:** muscles tense, weight shifted back, low to ground, may roll to expose belly, holding one paw up
- **Tail:** stiff, usually tucked or low to ground, may be wagging (slowly or rapidly)
- **Piloerection:** may or not be present, may be “blowing coat”
- **Ears:** pulled back against head
- **Mouth:** lips pulled back +/- growling/sharining, often see excessive panting, lip licking, chewing, yawning
- **Eyes:** Vigilant with pupils dilated, eyebrows furrowed, scanning/darting eyes, “whale eye”

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**Signs of an offensively threatening dog**

- **Body posture:** “hard & stiff”: muscles tensed, weight forward, may be very still
- **Tail:** carried high, often wagging slowly & methodically
- **Piloerection:** usually present
- **Ears:** erect and forward, little movement
- **Mouth:** top lip pulled up (baring front teeth only), growling, snapping, barking
- **Eyes:** Hard stare, wide open or squinted/hooded, eyebrows tensed, pupils dilated
3. Assess Yourself

**Avoid perceived threats and track your own body language**

- Avoid direct eye contact
- Avoid leaning over, bend at the knee instead of the waist. Turn your body to the side or squat down if safe
- Avoid reaching out to touch animals. Encourage them to approach you, have the handler bring them to you, or approach from the side
- Avoid loud talking and sudden movements
- Ask for help or reassess if or how to proceed if you feel afraid

4. Make a Handling Plan

**Critically consider what needs or must be done**

- Must the procedure(s) be done today, or at all?
- Select the appropriate level of restraint for the individual patient and the procedure
- Select any handling tools that will increase safety and decrease your patients fear and arousal
- Place the required procedures in order of most important to least important in the event the patient is unable to tolerate some of the procedures
- Then place those procedures in order of least offensive to most offensive so that early difficult procedures don’t inhibit your ability to complete later ones
- When needed, chemical restraint should be added before the animal becomes too aroused.
- Assess the level of pain, social invasiveness, number of procedures, and how the patient is coping with minimal handling. Consider immediate sedation when it is unlikely the patient will be able to tolerate all of the planned procedures
New College of Veterinary Medicine and Dog Shelter Enrichment Partnership

By Taylor Kirby-Madden, Ohio State College of Veterinary Medicine Class of 2014

For dogs awaiting new homes in shelters, the long hours spent in kennels alternate between stressful and boring. Shelter stays can be associated with an increase in undesirable behaviors, such as barking and jumping, and can eventually lead to more serious behavioral stereotypies, like circling and pacing. Unfortunately, these behaviors (initially begun to alleviate stress and boredom) are not attractive to potential adopters and often result in even longer shelter stays. Environmental enrichment is a critical component of managing behavioral health in any shelter environment.

Since August of 2011, the Franklin County Dog Shelter and the Ohio State College of Veterinary Medicine have partnered under the direction of Dr. Meghan Herron, ACVB to bring a comprehensive enrichment program to the adoptable canines at the shelter. Staffed by veterinary students and shelter volunteers, the program utilizes both social interaction and food toy enrichment protocols. Veterinary students enrolled in the course attend lectures on enrichment, learning theory, and current research in the field, as well as volunteering at the shelter once a week. Dogs receive daily food-filled Kong™ toys, as well as cage-behavior training designed to encourage dogs to sit politely at the front of the cage when potential adopters approach.

For students, this elective class offers invaluable hands-on practice in dog handling and training. For the dogs, the stress of the kennel environment is lessened and they learn acceptable behaviors that are more appealing to potential adopters. For more information on this program or to get involved, please contact Taylor Kirby-Madden at Kirby-Madden.1@osu.edu, or the Behavioral Medicine Clinic at behavior.medicine@cvm.osu.edu.

Effects of Pre-adoption Counseling for Owners on Separation Anxiety in Shelter Dogs – A Synopsis

Meghan Herron, Linda Lord, and Sarah Husseini
Synopsis by Sarah Husseini, Ohio State College of Veterinary Medicine Class of 2014

The efficacy of pre-adoption counseling in the education and prevention of separation anxiety problems was tested in a prospective, randomized, parallel-group study. Participants included 133 new owners of dogs six months of age and older. Prior to adoption, 66 of these owners were chosen at random, according to a computerized random number generator, to receive five minutes of counseling on separation anxiety. The remaining 67 owners that did not receive counseling served as the control group. A follow-up survey was conducted one month post adoption. 19 dogs in the total population were reported to have separation anxiety. There was no significant correlation for counseling to decrease the incidence of separation anxiety. Data shows that owners in both groups were performing most recommendations given during counseling. Of the six dogs relinquished, three were returned with the primary complaint of having separation anxiety. Dogs that were reported to have separation anxiety were more likely to show nervous or panicked behavior as the owner prepared to leave (p=0.00) and signs of neediness (p=0.031). Individual symptoms of separation anxiety such as destructive behavior, house-soiling, barking, and escaping had no significant variations between the two groups.

Having another dog in the home was not protective for separation anxiety, supporting previous research findings. There was a slight trend for putting food in a toy to be protective of separation anxiety(p=0.129). Owners in the treatment group were more likely than control to put food inside a toy (p=0.00); this suggests that pre-adoption counseling was implemented by the owners in the home.

Owner compliance supports the idea that counseling is a useful tool for owners. Although previous studies by Herron, et al. in 2007 found that pre-adoption counseling was significantly correlated with house training success, separation anxiety may be more difficult to prevent as it is more of an emotional disorder, rather than an operantly learned behavior. Further investigation should be done to find more specific, effective prevention tools for owners to use in the home to minimize the development of separation anxiety.
Spice Up Your Dog’s Kong

By Nichole Olp, Behavior Club Fundraising Chair
Ohio State College of Veterinary Medicine Class of 2015

The Kong has become a very popular toy loved by dogs, owners, and behaviorists alike. Kongs are very popular as an enrichment tool for shelter dogs. They are also commonly used at home as a toy and a tool help owners deal with dogs that have separation anxiety. The shape of the Kong makes it easy to fill with treats, ranging from dry kibble to wet food. It has two holes, one small and one large so dogs need to use a little bit of ingenuity and time to get to the treat.

However, just like humans, dogs can tire of the same taste over a long period of time. Unfortunately, this means your dog’s Kong may become less effective as a toy and as a tool if the same filler is used every time. Here are some ideas to spice up your dog’s Kong and keep him excited every time he sees it, giving your dog maximum palatability and giving you peace of mind.

Blend, Stuff, and Go: Mix solid food with peanut butter or cream cheese in a blender or in a bowl, and then stuff into a Kong. Cover the holes in the Kong with a bit of peanut butter or cream cheese to prevent any of the smaller ingredients from falling out right away. Remember, anything in a paste or liquid form can be frozen, giving your dog more play time which is perfect for when you are out of the house for longer periods of time. You can use any dog friendly foods or even your dog’s kibble. Some dog friendly foods are rice, pumpkin, apple slices, banana, cooked beef, cheerios, honey, and tuna.

Want something even more special for your dog? Try one of these dog-friendly Kong-filler recipes.

Fruit Parfait: Put a small piece of apple into the tiny hole of the Kong, this ensures none of the yogurt will leak out that end. Fill the Kong with a small amount of plain yogurt. Add a few slices of mashed banana, apple slices, and orange slices. If you want to you can add more yogurt to fill in the free space. Put a piece of banana or some peanut butter into the large hole to finish. This can get a little messy, so freezing the Kong after stuffing it is a great idea.

Mashed Meal: Cook instant mashed potatoes (with no salt) and fill the Kong. The potatoes can be mixed with any other dog friendly foods or your dog’s kibble. Fill the holes in the Kong with a bit of peanut butter if the mashed potatoes are on the runny side.

Oh My Omelet: Scramble an egg. You can add vegetables, cheese, or any dog friendly treat that can be cooked. Add to Kong. For an extra special treat, melt some cheese and pour into the holes in the Kong, one hole at a time. Wait until the cheese has completely cooled before giving the Kong to your dog.

The Titanic: Perfect for serving outside in warm weather. You can try this with one Kong or several. Fill the Kong or Kongs with any dog-friendly treat or recipe. Then, place the Kong(s) in the bottom of a bucket. Fill the bottom of the bucket with just enough water to cover the Kong(s). Mix liquid flavoring or chicken broth into the water. Place the bucket in a freezer. Once the water is frozen, loosen it from the bucket with a bit of hot water on the margins of the ice or on the outside of the bucket. Place the Kong-filled ice block on the ground and let your dog enjoy.
Leash Reactivity

By Nellie Wilbers, Behavior Club President
Ohio State College of Veterinary Medicine Class of 2015

On-leash reactivity is a common problem among dogs and can make the nicest dogs appear quite frightening. Leash reactivity can manifest as barking, growling, or lunging at other dogs, or sometimes children or bicycles, while on leash. It can be due to multiple problems such as fear or anxiety, over-arousal or excitement, and dog aggression. These behaviors can be inadvertently reinforced by the animal’s guardian if the dog is allowed to pull towards the stimulus or bark at the end of the leash. To prevent these problems from occurring, start working with your dogs as soon as you adopt them.

You always hear “an ounce of prevention is worth a pound of cure” and it really is true. The most important rule to follow with a new dog is to never let them pull you to greet another dog. If you do, they will learn that pulling gets them where they want to go and they are likely to try it again. Next, train behaviors that are incompatible with reacting on leash. For example, always require that your dog sit calmly and wait before greeting another dog. Once they are sitting calmly, you can give them a verbal cue, such as “go play”, so that they know they are allowed to approach the other dog.

If you have noticed on-leash reactivity in your dog, please seek the help of a positive trainer or academically trained behaviorist. If you notice mild signs such as overexcitement or arousal while on leash, you may want to try some of the following tricks at home.

If you see an approaching dog, get your dog’s attention and give a command that is incompatible with lunging at the end of the leash. A basic command such as sit or down, or making eye contact with a “watch me” cue, or even backing up and turning around, will work quite well for this.

Always have a tasty treat with you when you go on a walk. Reward your dog with a high value treat continuously during the beginning steps of training. High value treats are important in order to keep your dog’s attention despite a distracting environment. Ordinary milk bones will likely fail. Once you can keep your dog’s focus, you can move closer toward the stimulus or increase the amount of time between rewards. The goal of this exercise is to create a new positive association with the stimulus by using counter-conditioning, as well as gradual exposure to desensitize your dog. Afterwards they will see a dog and acquire a positive emotional state, instead of a fearful or anxious one.

In the beginning, you will want to reward frequently so that your dog does not react to the stimulus. Allowing your dog to react to the stimulus can increase fear, anxiety, and arousal, and make the behavior harder to extinguish in the future. For this reason, prevention and avoidance are key components of a behavior management plan that should be implemented simultaneously (i.e. keep your dog from having any contact with the stimulus when you are not working and able to control things completely. If you are in a situation where your dog cannot focus on you and is reacting to the stimulus, you are over the dog’s threshold. Promptly remove your dog from this situation by applying gentle pressure to the leash and moving away. A food lure, such as a small jar with cream cheese or peanut butter smeared on the inside, can also be used to guide them away.

Always avoid positive punishment in the form of a verbal reprimand or physical scolding, such as yelling “NO”, jerking on the leash, forcing dogs into threatening positions such as a “dominance down” or “alpha roll”. Using these methods can easily create an association in your dog’s mind that seeing other dogs on leash means bad things will happen to them. This type of training will only make your dog more fearful or aggressive.

If you are having leash reactivity problems, please seek the help of an experienced, positive reinforcement-based trainer, an academically trained applied animal behaviorist, or veterinary behaviorist.

Happy Training!!