

## Grey Muzzles: Age-related behavior changes in senior dogs



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## Geriatric patient population

Importance of recognizing behavior changes associated with aging:

- ▶ Awareness of underlying and pathology
- ▶ Accurate diagnosis treatment
- ▶ Quality patient care
- ▶ Client assistance



## “Kobee”

- ▶ 8-year-old M/N Golden retriever
- ▶ 4 aggression incidents within past year
- ▶ Approached by child while lying down
  - ▶ On floor, in chair, in back of SUV
- ▶ Growl, head threat, snap
- ▶ What should we consider?



## “Kobee”

- ▶ Timid when adopted, now exuberantly (and comfortably) social
- ▶ No history of resource guarding over food, objects, resting locations or owner attention
- ▶ Allowed supervised interactions with neighborhood kids and family friends
- ▶ History of intermittent lameness rear leg
- ▶ Stiff when rising from “down” position



## “Kobee”

- ▶ Aggression associated with:
  - ▶ Rising, movement, anticipation of movement
  - ▶ Physical or social interactions
  - ▶ Decreased tolerance of manipulation
- ▶ Pain related aggression



## “Kobee”: Pain related aggression

- ▶ Treatment options
  - ▶ Exam, diagnostics, pain medication trial
  - ▶ Limit interactions while lying down or resting
  - ▶ Awareness of body language
    - ▶ “Lookaway”, lack of response
  - ▶ Associate handling with +R
  - ▶ Progression is possible
  - ▶ Proactive use of basket muzzle



## “Sophie”

- ▶ 10-year-old Border collie
- ▶ Recent onset of separation anxiety signs
- ▶ Increased startle responses
- ▶ Lack of recognition of family members
- ▶ What should we consider?



## “Sophie”

- ▶ No evidence of cognitive decline
- ▶ Normal activity, energy, movement
- ▶ Decreased appetite, interest in sniffing on walks
- ▶ Isn't reacting to sound of garage door or doorbell



## “Sophie”

- ▶ Anxiety secondary to loss of maintenance cues
- ▶ Decreased visual tracking, lack of response to environmental stimulation (noises)
- ▶ Reduced sense of smell and appetite
- ▶ Sensory decline



## “Sophie”: Sensory Decline

- ▶ May also present as social disengagement, aggression, anxiety, hyperactivity or restlessness
- ▶ Limited options for treatment – focus on management
  - ▶ Safety during interactions
  - ▶ Treatment of anxiety
  - ▶ Vibrating collar
  - ▶ Adequate lighting
  - ▶ Awareness without startle
  - ▶ Drag line leash
  - ▶ Enhanced flavor diet



## “Blitzen”

- ▶ 11-year-old M/N Newfoundland
- ▶ Four month history of indoor elimination
- ▶ What should we consider?



## “Blitzen”

- ▶ Previous refusal to enter clinic (smooth floors)
- ▶ Stopped going to 2<sup>nd</sup>/3<sup>rd</sup> levels of home months prior to onset of elimination issues
- ▶ Unable to support own weight for more than 30-45 seconds
- ▶ Fell down steps of deck



## “Blitzen”

- ▶ Trainer forced out of house during “training session”
- ▶ No indications of incontinence
- ▶ Progressive history of weakness and/or physical problems
  
- ▶ Primary musculoskeletal issues
- ▶ Conditioned fear/aversion leading to Breakdown in housetraining



## “Blitzen”: Breakdown in housetraining

- ▶ Fear/aversion (flooring, post injury, weather)
- ▶ Lack of access to elimination location
- ▶ Screen for incontinence, urgency, GI or urinary tract problems
- ▶ Difficulty maintaining posture or pain while posturing to eliminate
  
- ▶ Treatment options:
  - ▶ Treat underlying physical issues
  - ▶ Increase access, environmental management strategies
  - ▶ Behavior modification to address aversion



## “Josey”

- ▶ 12-year-old F/S Standard Poodle
- ▶ Taking items out of trash and off counters
- ▶ Barking at owner
- ▶ Jumping on visitors
- ▶ Progressive frequency and intensity
- ▶ What should we consider?



## “Josey”

- ▶ Strong social bond with owner
- ▶ Independent temperament
- ▶ Well trained, therapy dog
- ▶ Change in care relationship with owner correlating with advanced age and primary medical issues





## “Josey”

- ▶ Pattern of exuberant behaviors in a variety of contexts (impulse control issues)
- ▶ History of redirection/reinforcement of unwanted behaviors
- ▶ No evidence of cognitive decline
- ▶ Intelligent, operant learner
- ▶ Loss of behavioral inhibition
  - ▶ (Reinforced behaviors)



## “Josey”: Decreased inhibition

- ▶ May appear as:
  - ▶ Increased attention seeking behavior
  - ▶ Pushy or opportunistic behaviors
  - ▶ Loss of manners or training
- ▶ “90-year-old grandmother” effect
- ▶ Treatment options:
  - ▶ Awareness of reward patterns
  - ▶ Increased management
  - ▶ Attention to basic training



## “Sabrina”

- ▶ 12-year-old F/S Greyhound
- ▶ Eight week history of barking during evening hours and periodically overnight
- ▶ What should we consider?



## “Sabrina”

- ▶ Minimum database/radiographs – no significant abnormal findings
- ▶ No response to NSAID, gabapentin, tramadol
- ▶ No response to DAP, Xanax, melatonin, acepromazine
- ▶ Disrupted sleep/wake cycle



## “Sabrina”: Sleep/wake disruption

- ▶ May be due to:
  - ▶ Changes in exercise schedule or needs
  - ▶ Changes in elimination schedule or needs
  - ▶ Anxiety (situational or generalized)
  - ▶ Pain or discomfort
  - ▶ Hypertension
  - ▶ Owner reinforcement
  - ▶ Cognitive impairment



## “Sabrina”: Sleep/wake disruption

- ▶ Treatment options:
  - ▶ Treatment specific to underlying diagnosis
  - ▶ Reinforce sleep/wake cycle
  - ▶ Afternoon/evening exercise
  - ▶ Bedtime routine, lighting changes
  - ▶ Body wrap options
  - ▶ Consider melatonin and/or trazodone trial
  - ▶ Complementary therapies



## Support for owners

- ▶ Varying perspectives on aging and death
- ▶ Past experience with family or pets
- ▶ Lack of support within social circle
- ▶ Role of pet in household
- ▶ Increased demands on time and energy
- ▶ Unavoidable outcome



## Age related changes

- ▶ UC Davis study: Nielson 2001
- ▶ 180 dogs aged 11-16 years
- ▶ No primary medical diagnoses to account for behavioral changes
  - ▶ Decreased social interaction with owners
  - ▶ Sleep-wake cycle changes
  - ▶ Activity level changes
  - ▶ Housesoiling
  - ▶ Disorientation



## Age related changes

- ▶ 11-12 yr old dogs
  - ▶ 28% positive for at least one category
  - ▶ 10% positive for at least 2 categories
- ▶ 15-16 yr old dogs
  - ▶ 68% positive for at least one category
  - ▶ 36% positive for at least 2 categories
- ▶ >50% of dogs 11+ yrs old – at least one sign
- ▶ Only 7% of owners spontaneously reported problems to vet

## Awareness and education

- ▶ Assumed to be part of "growing older" and aging process
- ▶ Owners may not be aware that treatment is available
- ▶ Concerns may not be raised unless asked about specifically



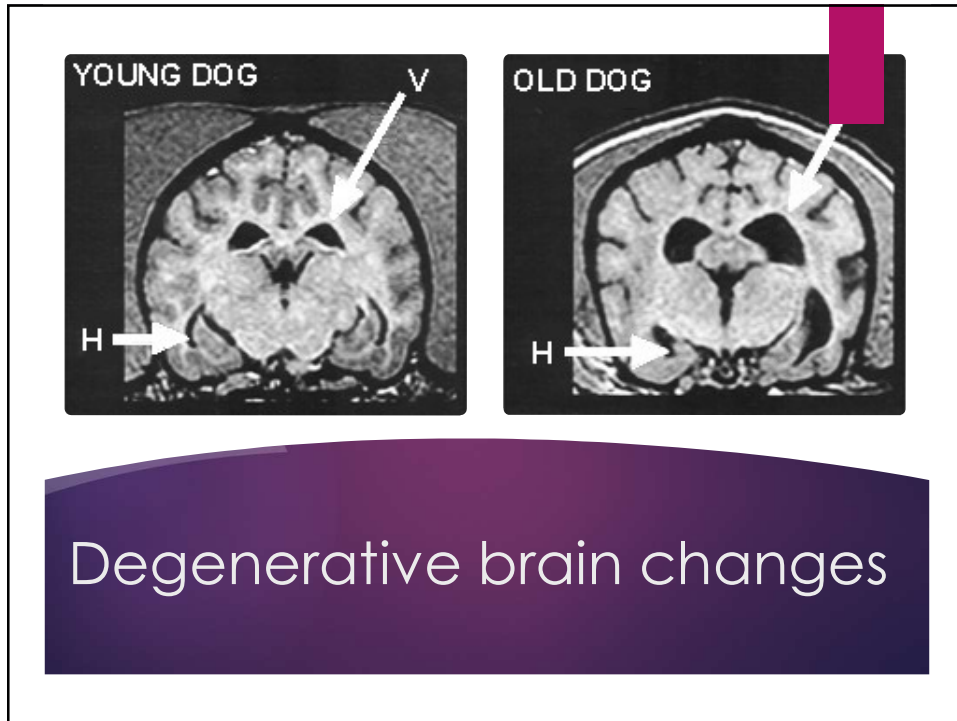
## Cognitive Dysfunction Syndrome (CDS)

- ▶ Disorientation in familiar environments
- ▶ Interactions with human or other animals decline
- ▶ Sleep/wake cycle disturbance
- ▶ House training (and other previously learned behaviors) might deteriorate
- ▶ Activity changes
  - ▶ Lack of interest in exploration, eating, grooming
  - ▶ Increase in non-directive behaviors (pacing, vocalizing, and compulsive behaviors)

## Cognitive Dysfunction Syndrome (CDS)

- ▶ Neurodegenerative condition
- ▶ Subset of aging patients
- ▶ Changes in performance on memory tasks in dogs as young as 6-8 years
- ▶ Progressive cognitive decline
- ▶ Not only "ancient" dogs
- ▶ Diagnosis of exclusion





## Cognitive Dysfunction Syndrome (CDS)

*J Vet Intern Med* 2013;27:822-829

### **An Observational Study with Long-Term Follow-Up of Canine Cognitive Dysfunction: Clinical Characteristics, Survival, and Risk Factors**

R. Fast, T. Schütt, N. Toft, A. Møller, and M. Berendt

- ▶ 94 dogs >8 years old
- ▶ 4 key signs:
  - ▶ Sleep during day, restless at night
  - ▶ Decreased interactions
  - ▶ Disorientation at home
  - ▶ Anxiety
- ▶ Presence of CDS did not negatively influence survival
- ▶ No significant difference based on size or sex

## CDS Treatment Fundamentals

- ▶ Convenient and frequent outdoor access for elimination
- ▶ Mental and physical enrichment
  - ▶ Exercise, play, training, food dispensing toys
- ▶ Environmental management
  - ▶ Light for orientation, soft bedding, awareness of mobility issues, maintenance cues
- ▶ Treatment for primary medical and behavioral issues

## Hills Prescription Diet® b/d®

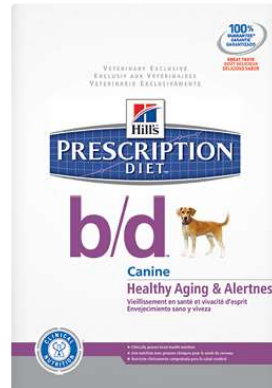


- ▶ Supplemented with:
  - ▶ Vitamin E and C
  - ▶ Selenium, beta carotene
  - ▶ Flavenoids, caratenoids
  - ▶ Omega 3, EPA & DHA
  - ▶ L-carnitine, lipoic acid
- ▶ Dry formula only



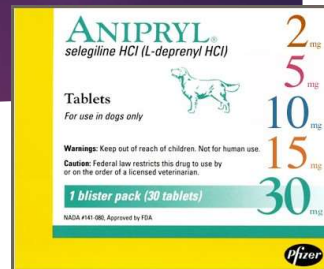
## Hills Prescription Diet® b/d®

- ▶ 125 dogs > 7yrs with 2 or more CDS signs
- ▶ Fed b/d or other commercial food for 60 days
- ▶ Dogs in treatment group improved in 13/15 behaviors
- ▶ Control dogs improved in 4/15



## Seligiline (Anipryl®)

- ▶ FDA approved for dogs
- ▶ MAO-B inhibitor
  - ▶ Neuroprotective
  - ▶ Decreased free radicals
  - ▶ Improved dopamine transmission
- ▶ Side effects:
  - ▶ Restlessness, GI upset
  - ▶ Repetitive behavior at higher dosages
- ▶ Contradictions (do not use with):
  - ▶ Other MAOI drugs (e.g. amitraz, Preventic®)
  - ▶ SSRIs/TCAs (after appropriate washout)



## Seligilene (Anipryl®)

- ▶ Improvement in 69-75% of patients during placebo controlled drug trials
- ▶ 77% overall improvement at day 60 in field trial of 641 dogs
- ▶ Dosage: Dogs 0.5-1mg/kg PO q24hr in the morning
- ▶ Re-evaluate in 1-2 months and adjust dosage as needed



## Senilife® (Ceva)

- ▶ Contains
  - ▶ *Phosphatidylserine*: Improves nerve cell communication
  - ▶ *Pyridoxine*: Essential for normal brain development, function, and neuron health
  - ▶ *Ginkgo Biloba*: Improves cerebral blood flow, increases glucose metabolism, strong antioxidant effect
  - ▶ *Resveratrol*: Antioxidant which protects neurons from toxic substances that can cause cell death
  - ▶ *Vitamin E*: Antioxidant with neuroprotective potential, slows functional deterioration
- ▶ Clinical trial on 8 dogs, 60 day test period, not placebo controlled



## Novifit® (Virbac formulation of SAME)

- ▶ SAME production decreases with age, correlates with folate levels in CSF
- ▶ Precursor molecule to transulfuration pathway leading to synthesis of glutathione
- ▶ Responsible for methylation of molecules and neurotransmitters
- ▶ Studied as primary or adjunct antidepressant therapy in humans
- ▶ Clinical trial – placebo controlled



**Table 2. Study results: Improvement in total mental score and geriatric disability index as measured on Day 60**

	Novifit	Placebo
Total mental score	44.1%	24.7%
Geriatric disability index	49.0%	23.9%

## Neutricks® (Quincy Animal Health)

- ▶ Jellyfish protein 'apocaequorin'
- ▶ Protect cells through calcium regulation
- ▶ 32 day blinded trials, comparison between placebo and selegiline
- ▶ Improved performance on discrimination task against placebo
- ▶ Greater performance accuracy compared to selegiline subjects



## Cognitive Dysfunction Syndrome (CDS)

- ▶ Early detection, diagnosis and treatment is key
- ▶ Treatment doesn't cure, slows the progression
- ▶ Prognosis decreases with severity and length of clinical illness
- ▶ Realistic expectations!



## Age related behavior changes

- ▶ Awareness of underlying problems and pathology
- ▶ Accurate diagnosis and treatment
- ▶ Quality patient care
- ▶ Client support and assistance where needed



Thank you for your attention!

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