

## Animal Welfare Series Caring for the Senior Pet

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## Outline

- What is an older patient?
  - Defining Age
  - Defining Geriatric Medicine
  - Breed and Size Differences
- Is this a problem?
- Why check-ups are important
- Questions routinely asked



## Age is NOT a disease

- What is Aging?
- What defines a geriatric patient?
- Breed and size differences



## Age Is NOT a disease

- Inevitable, irreversible decline in organ function
- This occurs even in the absence of injury/illness
- Typically even with decline baseline parameters will be **unchanged**
- The Kidney example



## Geriatric Definition

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- Human Definition
- > 65 years of age
- Average life expectancy 87 years
- Large time span



## Geriatric Definition

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- Veterinary Definition
- What is > 65 years old in a dog?
- Wide range of breed and size variations
- There is some research but still hard to define



## Size definition – Dogs

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- Companion Dogs – Survey in
  - Large > 36 kg
  - Medium 18 to 36 kg
  - Small 5.4 to 18 kg
  - Toy < 5.4 kg



## Large Breed Dogs Longevity

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- Leonberger -- average 6.9 years
- Newfoundland – average 9.3 years
- Rottweiler – average 9.1 years

Michell, A. R., 1999. Longevity of British breeds of dog and its relationships with sex, size, cardiovascular variables and disease. *Veterinary Record* 145:625-629.

## Medium Breed Longevity

- Boxers – average 8.8 years
- Dalmatian – average 11.2 years
- Standard Poodle -- average 11.9 years

• Mitchell, A. R., 1999. Longevity of British breeds of dog and its relationships with sex, size, cardiovascular variables and disease. *Veterinary Record* 145:625-629

## Small Breed Longevity

- Bichon Frieze – average 12.2 years
- French Bulldog – average 9 years
- Lhasa Apso – average 13.9 years
- Miniature Poodle -- average 14.2 years
- Miniature Schnauzer – average 11.8 years
- Pug – average 11 years

• Mitchell, A. R., 1999. Longevity of British breeds of dog and its relationships with sex, size, cardiovascular variables and disease. *Veterinary Record* 145:625-629.

## Toy Breed Longevity

- Yorkshire Terrier – average 12.2 year
- Toy poodle – average 14.5 years
- Pekingese – average 11.5 years
- Pomeranian – average 9.6 years
- Maltese – average 12.5 years
- Japanese Chin – average 9.2 years

• Mitchell, A. R., 1999. Longevity of British breeds of dog and its relationships with sex, size, cardiovascular variables and disease. *Veterinary Record* 145:625-629.

## Weight and Longevity

- Most Longer Lived breeds are SMALL
- Most Short-lived breeds are LARGE
- Not all SMALL breeds live LONGER
- Hard to have a cut off point across breeds
- Cross breeds typically live 1.2 years longer

• O'Neill et al. (2013) Longevity and mortality of dogs owned in England. *Vet J* 198(3):638-43

## Defining Geriatric Dogs

- Rough definition is 75-80% of expected life span
- E.g. average 9 years – 6.7 to 7.2 years = geriatric
- E.g. average 14 years – 10.5 to 11.2 years = geriatric



## Longevity and Cats

- Study in the UK – over 118 thousand cats
- Median Survival was 14 years
- Crossbreed > Pure (14 vs 12)
- Factors associated with longer life
  - Crossbreed
  - Lower body weight
  - Neutered/spayed
  - Non-insured
- O'Neill et al. 2015. Longevity and mortality of cats attending primary care veterinary practices in England. *JFMS*. 17(2):125-33

## Defining Geriatric Cats

- Typically cats greater than 10 years of age
- Study looking at 2 groups of cats
  - Group 1: 6 to 10 years of age
  - Group 2: > 10 years
- 100 healthy cats
- Physical Examination, blood work, blood pressure
- Paape D, Verjans G, Duchateau L, et al. Routine health screening: Findings in apparently healthy middle-aged and old cats. *J Feline Med Surg* 2015;15(1):8-19.

## Findings in Cat Study

- Gingivitis: 72 cats
- Crystalluria: 41 cats
- Submandibular lymphadenopathy: 32 cats
- Elevated creatinine concentration: 29 cats
- Hypoglycemia: 25 cats
- Thyroid gland: 20 cats
- Feline immunodeficiency virus infection: 14 cats
- Heart murmur: 11 cats
- Elevated systolic blood pressure (> 160 mm Hg): 8 cats
- Elevated total thyroxine concentration (> 3.5 µg/dl): 3 cats
- Over proteinuria (urine protein:creatinine ratio > 0.4): 2 cats
- Paape D, Verjans G, Duchateau L, et al. Routine health screening: Findings in apparently healthy middle-aged and old cats. *J Feline Med Surg* 2015;15(1):8-19.

### Take Home Message from Study

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- High blood pressure, heart murmur more likely to occur in older patients
- Other parameters overlap between the two groups
- Even though apparently healthy still many things picked up that need to be monitored



### Aging in Dogs and Cats

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- Not a linear relationship
- Many variables including breed, size, crossbreeding
- No set cut off age to define old
- Need to come up with other ways to follow patients



### Is this a problem?

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### My patient is drinking more

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- Is it just hot outside?
- What is drinking to much?
- What does increased drinking mean?
- Differences between cats and dogs



## My pet is drinking more

- Defining drinking too much
  - > 100 mls/kg/day
  - 30 kg dog needs to drink 3 liters of water
  - 4 kg cat needs to drink 400 mls of water
- Causes
  - Kidney disease (Dogs and Cats)
  - Liver Disease (Dogs and Cats)
  - Endocrine Disease (Dogs and Cats)



## Kidney Disease

- Kidneys are no longer able to get rid of waste products
- 75% of kidneys need to be damaged
- 0.5 to 1% of geriatric dogs
- 1 to 3% of geriatric cats
- Chronic renal failure
  - 3<sup>rd</sup> most common cause of death in dogs
  - 2<sup>nd</sup> most common cause of death in cats

## Liver Disease

- Many of causes of liver disease
- Study looking at Liver disease 1.24% of dogs and 0.41% of cats in a hospital population



## Diabetes Mellitus

- Insulin
  - Dogs
  - Cats
- Clinical Signs
  - Starving in the face of plenty



## Diabetes

- Study looking at Cats – 11.6% of cats over 10 years
  - Male cats 2X more likely
  - Domestic Cats more than pure breeds
- Study looking at dogs
  - 1.2% of dogs before 12 years (8.6 years of age)
  - Females more common than males
- Ohlund et al. 2015 Incidence of DM in insured Swedish cats in relation to age, breed, and sex. JVIM 29(5):1342-1347.
- Fall et al. 2007. Diabetes Mellitus in a Population of 180,000 Insured Dogs: Incidence, Survival, and Breed Distribution JVIM 21:1209-1216.

## Hyperthyroidism

- Cats
- Usually a benign tumor in the thyroid gland
- Causing increased heart rate, high blood pressure
- Can lead to heart disease



## Hyperthyroidism

- Study in Hong Kong
  - Looked at 305 cats aged 10 years or older
  - 3.93% of the population
  - Older cats >15 years more likely
  - Domestic shorthairs less likely
- De Wet et al. 2009. Prevalence of and risk factors for feline hyperthyroidism in Hong Kong. JFMS. 11(4):315-21.

## Hyperadrenocorticism

- Dogs
- High levels of cortisol
- Can be pituitary tumor (85%) or adrenal tumor (15%)
- Typically these patients are healthy with increased thirst, urination and appetite.

## Hyperadrenocorticism (Cushing's Dx)

- Study in the UK looking at 210 thousand dogs
  - Prevalence was 0.28%
  - Bichon Frise 6.5 X more likely
  - Dogs greater than 12 years 5.6 X more likely
  - Overweight dogs 1.7X more likely
- O'Neill et al. 2016. Epidemiology of hyperadrenocorticism among 210,824 dogs attending a primary care veterinary practice in the UK from 2009 to 2014. JSAP. 57(7):365-73.

## My patient is slowing down

- Is it just old age?
- Heart Disease
- Arthritis



## Heart Disease

- Study Looking at 103 healthy Cats
  - 15.5% had heart murmur – 5 /16 had heart disease
  - 15.5% of cats without murmur had heart disease
  - Hearing heart murmur lots of false negative results
  - 75% of dogs > 16 years have heart disease
- Paige et al. 2009. Prevalence of cardiomyopathy in apparently healthy cats. JAVMA 234(11):1398-403.

## Arthritis

- In cats, 73% showed signs of OA
  - Mostly elbow and hips in cats
  - 64% in older cats
  - 16 to 22% asymptomatic
- Bennett et al. 2012. Osteoarthritis in Cats: 1. how common is it and how easy to recognize. JFMS 14(1):65-75

## My pet is losing weight

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- Doesn't like the food?
- Lots of diseases
  - Kidney disease
  - Hyperthyroidism
  - Liver disease
  - Heart Disease



## Peeing in the house/abnormal spots

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- Is just being lazy?
- Increased urinations
- Diseases
  - Diabetes
  - Kidney disease
  - Hyperthyroidism
  - Liver disease



## Take Home

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- Age is not a disease
- Old age is not standard definition across breeds and species
- Changes – may be signs of disease
  - Increased drinking
  - Weight loss
  - Slowing down
  - Inappropriate urinations



## What to Do

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- Screening of older patients
  - Physical examinations
  - Blood pressure
  - Blood work
  - Urine Samples
- If healthy every 6 months to yearly
- Monitor for changes
- If sick – more frequently



