

# Feeding the ageing pet: nutritional needs of senior dogs and cats



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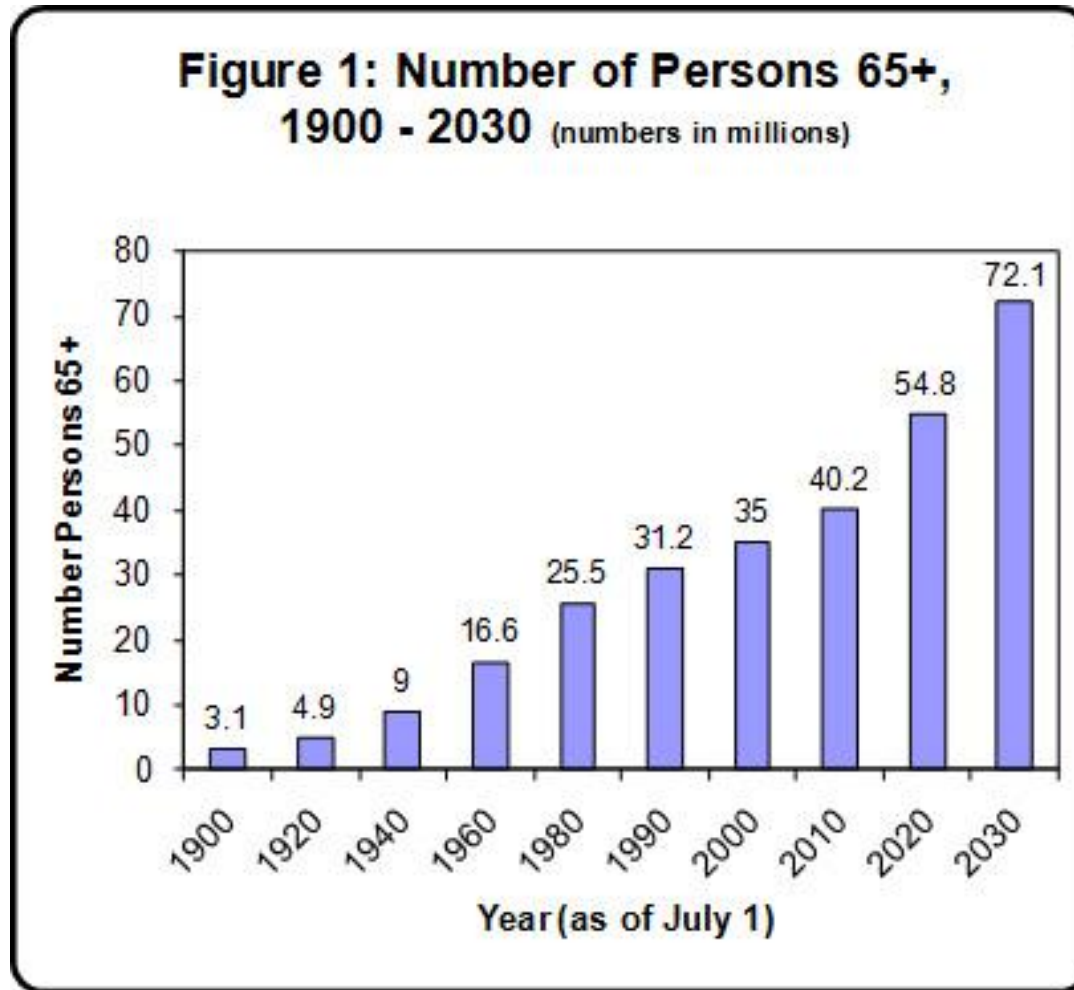
# Older 'senior' pets

## Why, What and How!

# Family members



# LIFESPAN is INCREASING: US population



Source: US Bureau of Census.



# Increasing population of older pets?



Pusuke, cross-breed, Japan,  
26 yrs  
~ 125 Humans years



Tiffany Two, Tortoiseshell, USA, 27  
years  
~ 135 human years

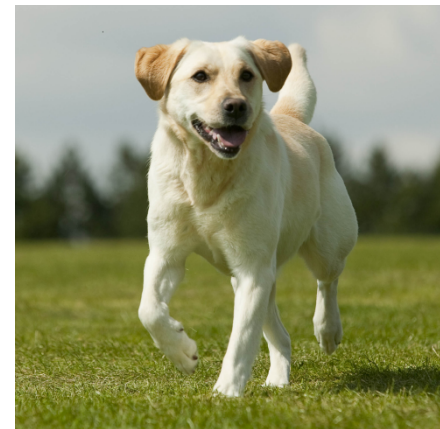
# Increasing older per population



## State of Pet Health 2013



- Average lifespan 12.1 yrs
- Up by 1 yr since 2002



- Average lifespan 11 yrs
- Up by ~0.5 yrs since 2002

Source: Banfield Pet Hospital: State of Pet Health 2013 Report

# What do we know about older pets

- Increasing number!
- How do we define 'Senior' ?
- Do they have specific issues?
- Do they have specific needs?



# Defining Senior Pets

- Chronological age
  - Retirement???
  - Pick an age!
  - Arithmetic model: final 1/3rd of typical life-span
- Biological age
  - No established biological marker?
  - Physiological changes/conditions associated with ageing?
- Different ages and terms used to describe the ageing pet: mature, senior, super-senior, geriatric



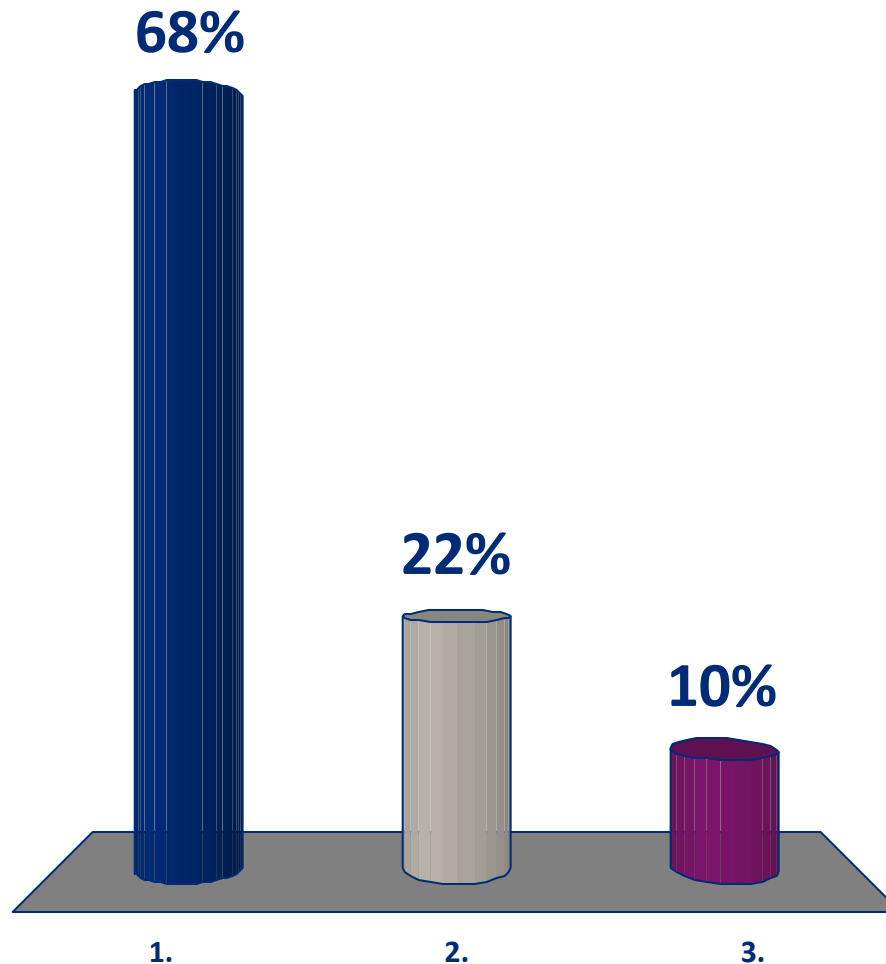
# What does the 'Nutrition' community think?

- Survey of attendees at WINSS 2013, Portland, Oregon: Academia, Industry, Regulators
- Multiple choice questions on senior
- Opinion not fact!



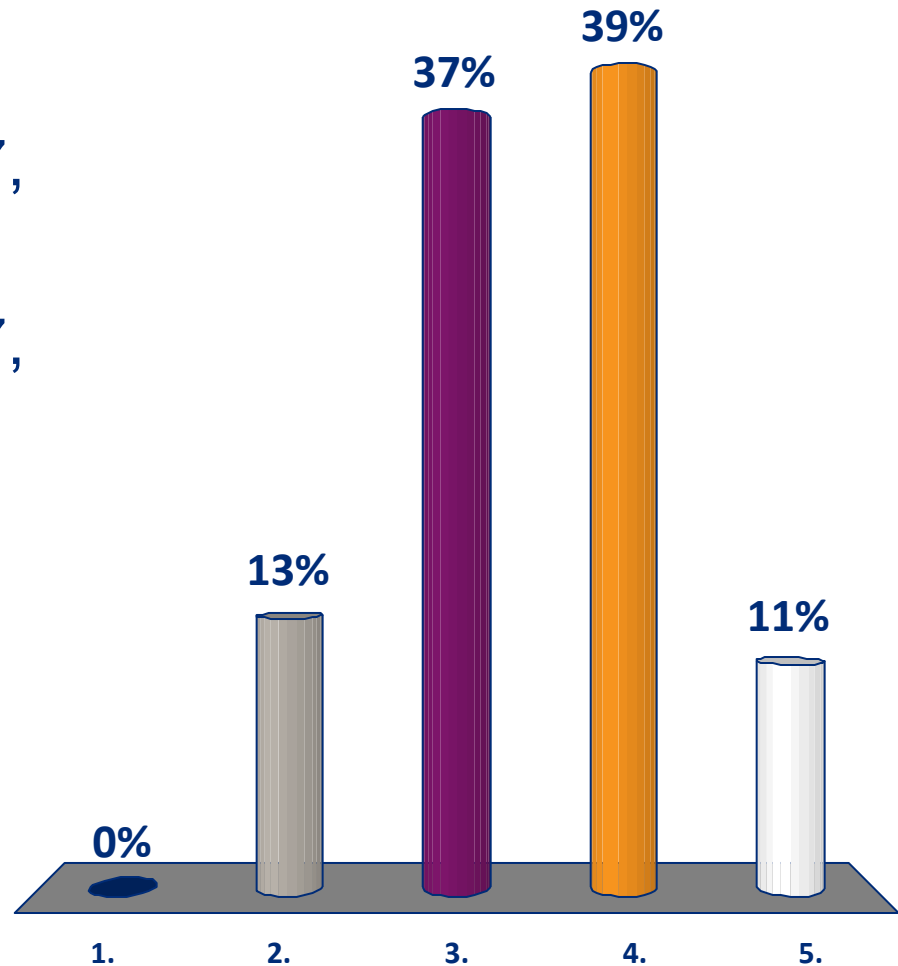
## For pets, is 'Senior' a distinct life-stage?

1. Yes
2. No
3. Not sure



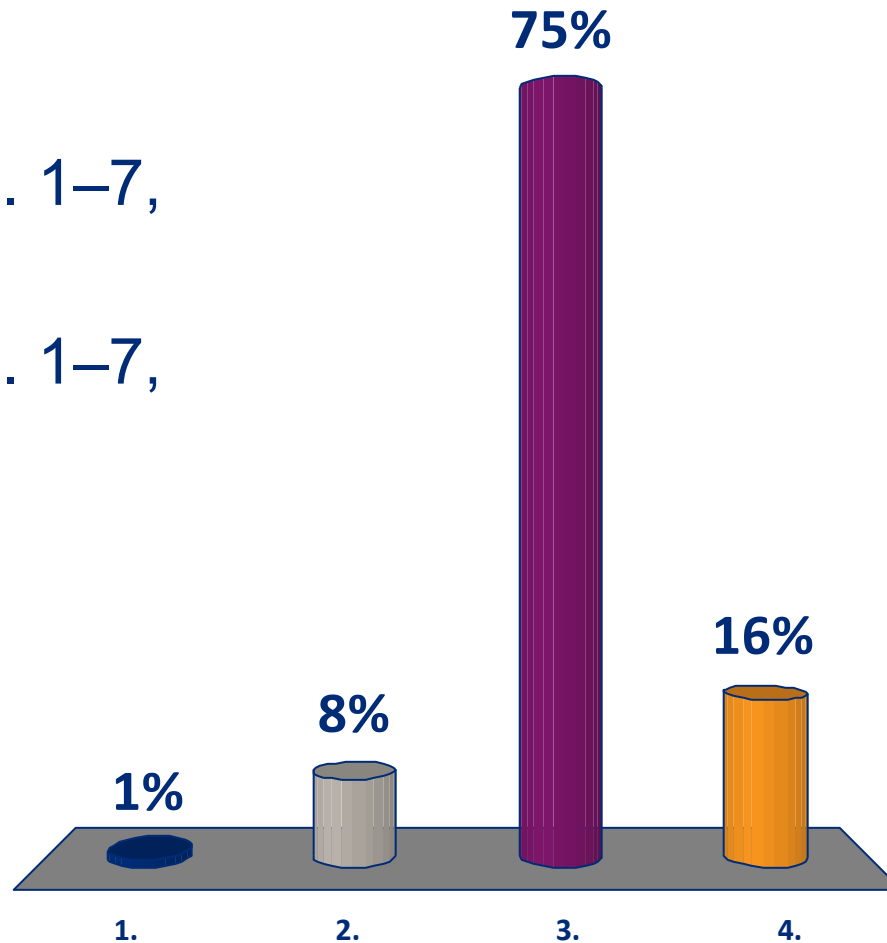
# How many distinct phases are there in the lifecycle of the adult dog?

1. 1 phase
2. 2 phases (e.g. 1–7, 8+)
3. 3 phases (e.g. 1–7, 8–14, 15+)
4. Depends on size
5. Other



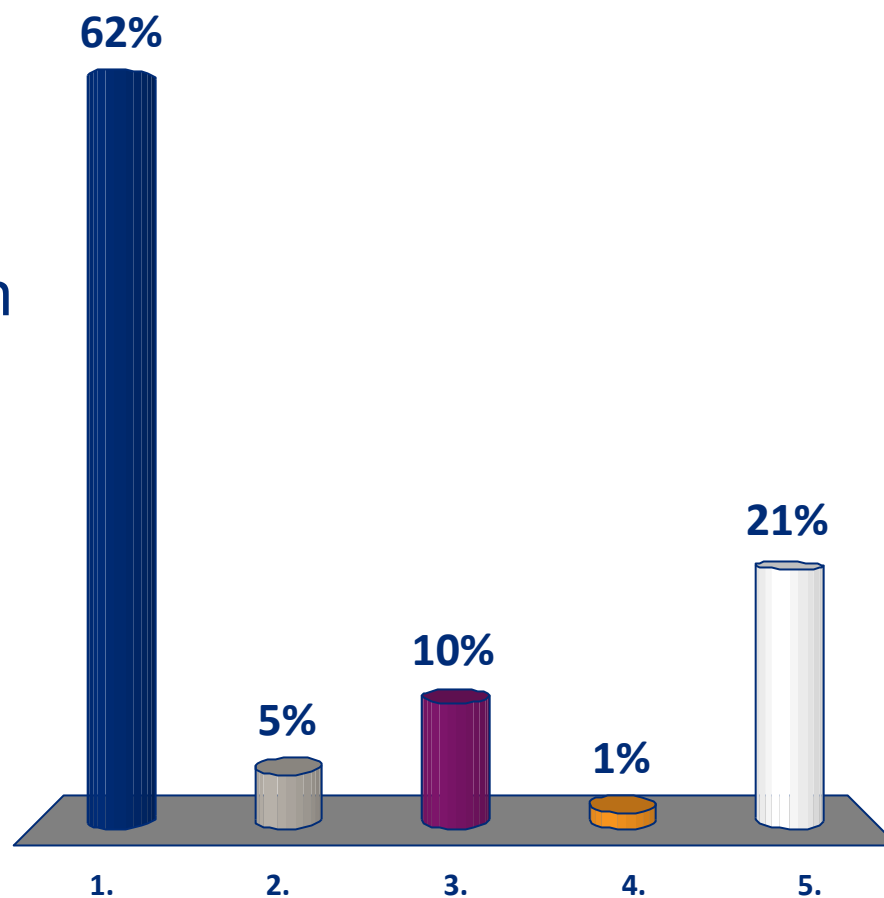
# How many distinct phases are there in the lifecycle of the adult cat?

1. 1 phase
2. 2 phases (e.g. 1–7, 8+)
3. 3 phases (e.g. 1–7, 8–14, 15+)
4. Other



# How do you identify your dog is getting older?

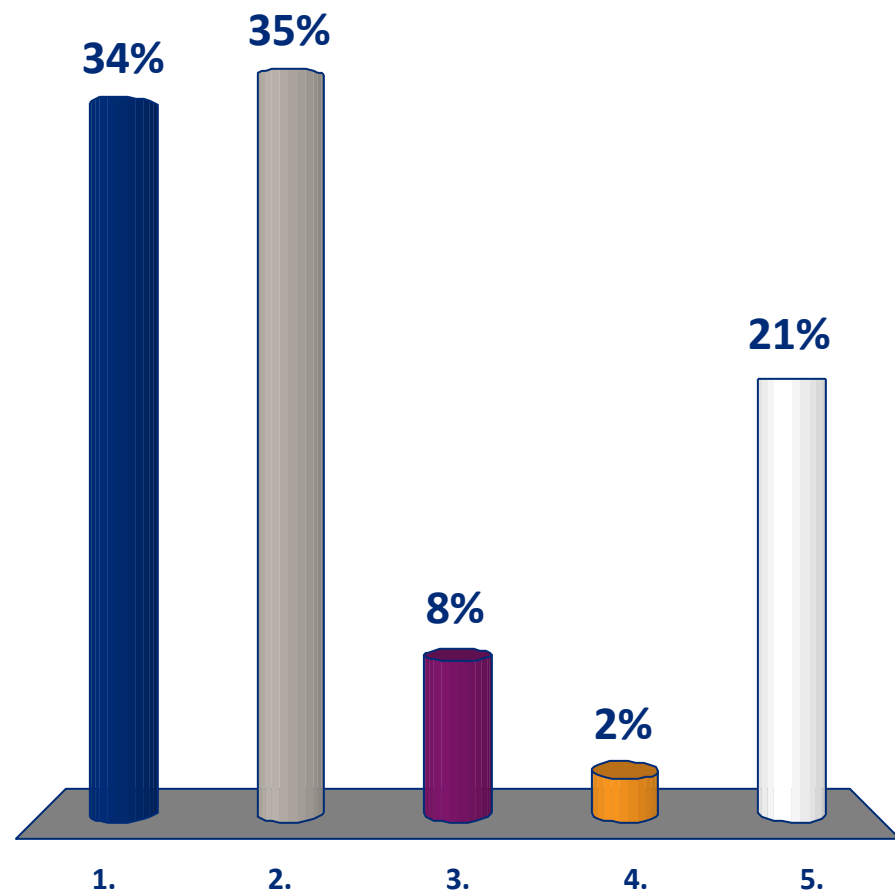
1. Less active
2. Losing weight / losing appetite
3. Skin/coat condition
4. Poor oral health
5. Other





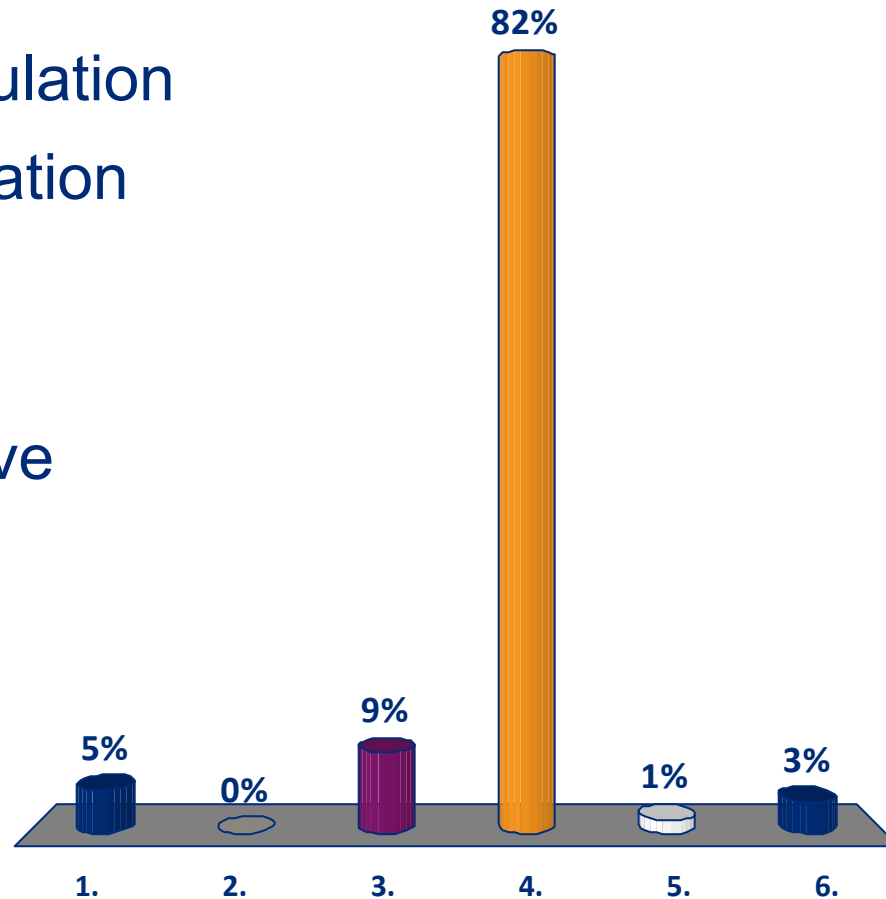
# How do you identify your cat is getting older?

1. Less active
2. Losing weight / losing appetite
3. Skin/coat condition
4. Poor oral health
5. Other



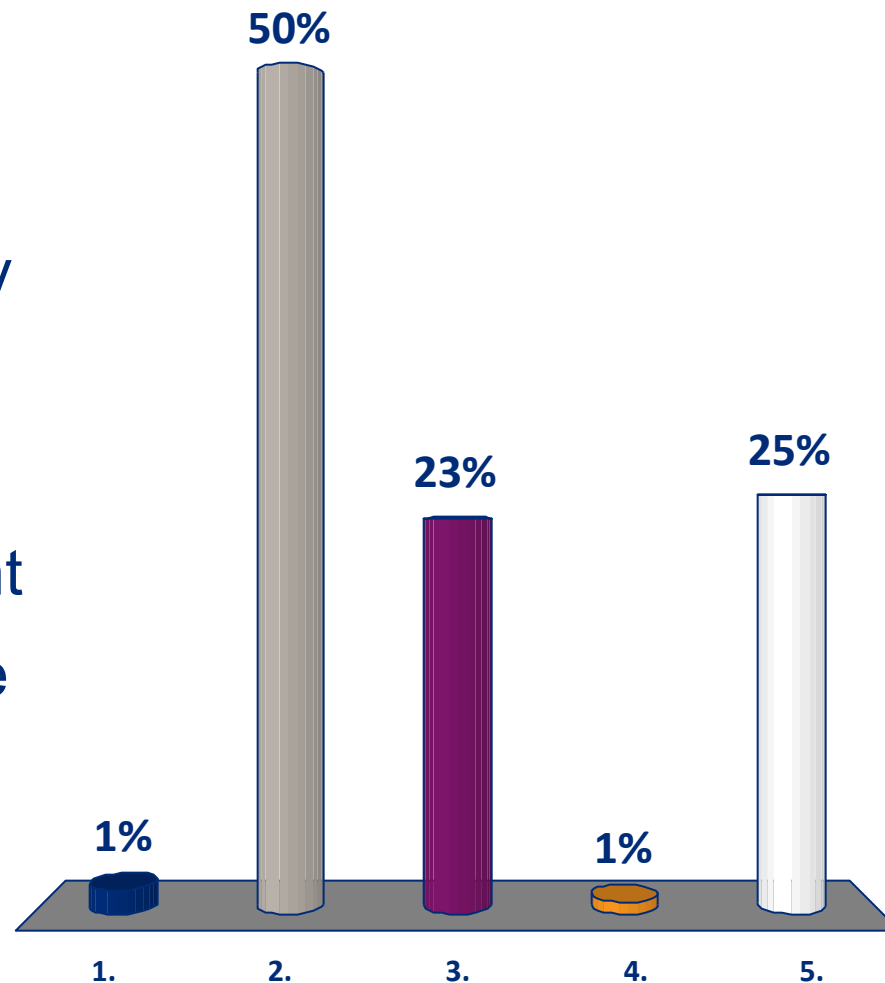
# What interventions would you recommend to delay ageing in dog/cat?

1. Physical stimulation
2. Mental stimulation
3. Nutritional intervention
4. All of the above
5. Other
6. Not relevant



# Nutritional guidelines for the older dogs and cats are:

1. Unnecessary
2. Essential
3. Nice to have
4. Not important
5. Not available



# Key themes on the beliefs and perceptions of the Pet Nutrition Science Community

- Senior is a distinct life-stage
- Observe visible changes in the ageing pet, and these differed between dogs and cats
- Need for nutritional guidelines
- This survey reflects belief and perception!!

# Changes associated with ageing!





# Changes associated with ageing!

- Body weight and LBM
- Digestive function
- Chronic kidney disease
- Mobility
- Hyperthyroidism
- Appearance
- Behaviour
  - Cognition
  - Activity

# Body weight





# Impact of Obesity on Pets

## Increased risk of health problems<sup>1</sup>

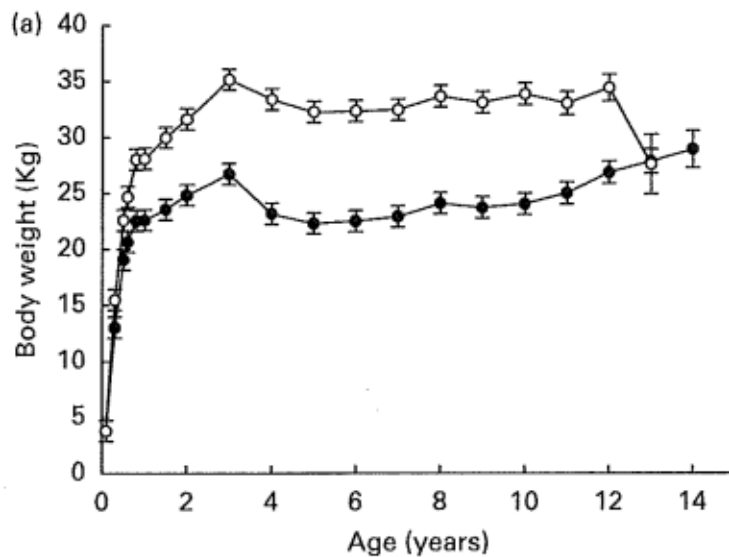


- osteoarthritis
- diabetes
- cancers
- cardio-respiratory disease...

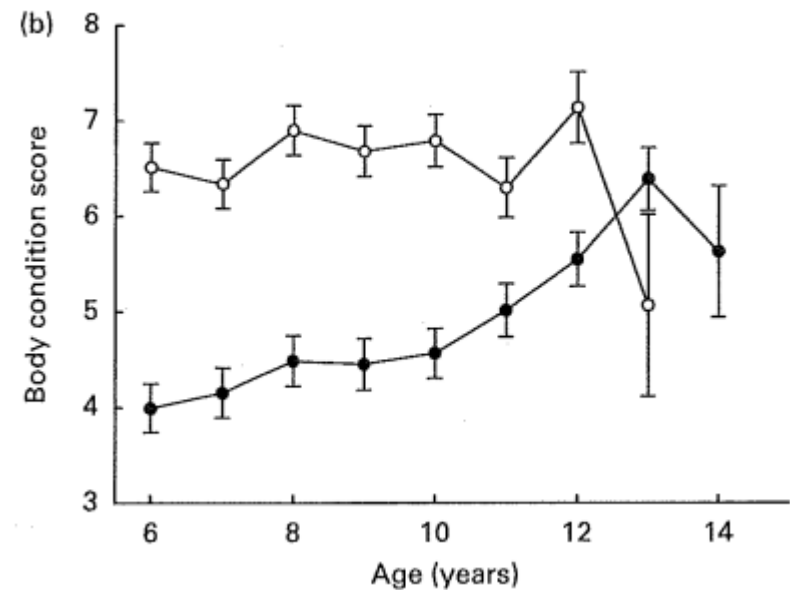
<sup>1</sup>German AJ. J Nutr 2006; 136(7 Suppl):1940S-1946S

# Being overweight reduces lifespan in dogs?

Decrease in average life time BW



Decrease in average life time BCS



Adapted from Lawler et al., (2008). Br. J. Nutr. 99: 793-805



# Being overweight in mid-life is associated with a reduction in lifespan in popular breeds of domestic dog



Shih Tzu



Dachshund



American Cocker  
Spaniel



Beagle



Golden Retriever



Yorkshire Terrier



Pomeranian



Chihuahua



German Shepherd



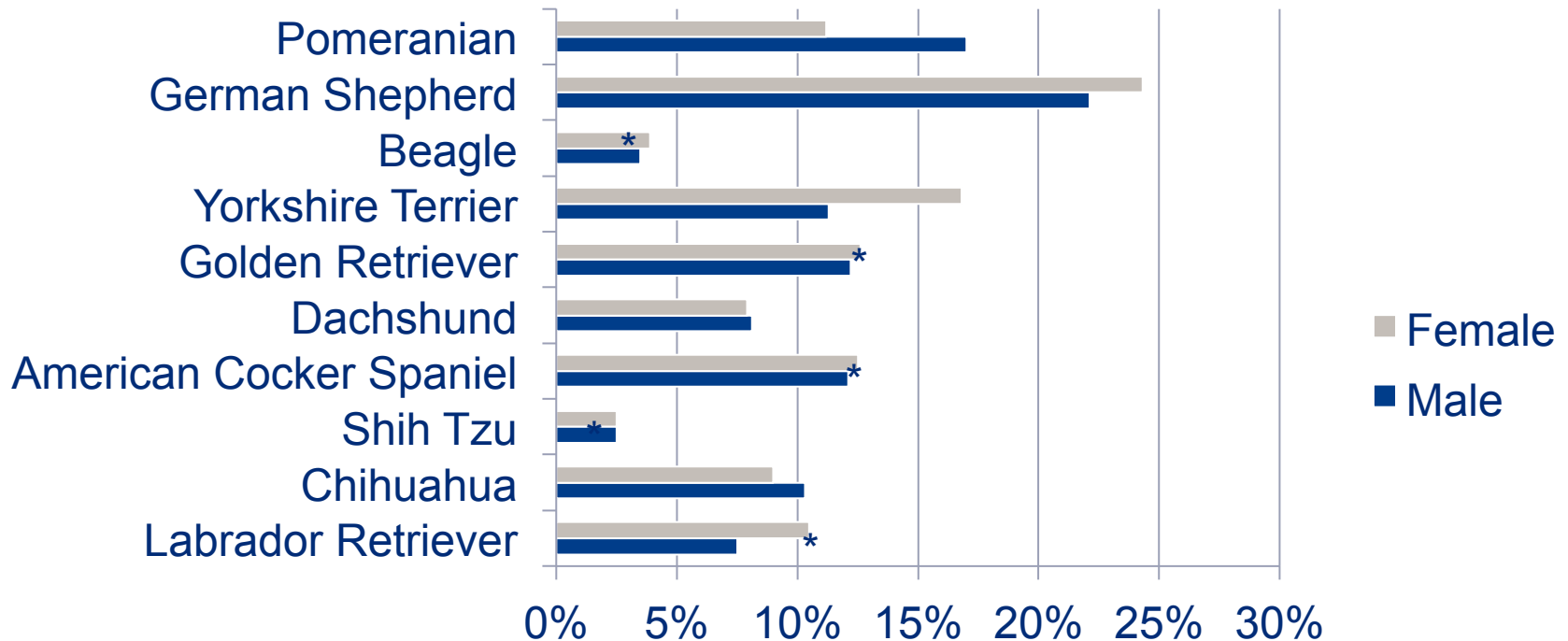
Labrador  
Retriever

## Associations between longevity and body condition in domestic dogs

Salt, C. and Morris, P. (2013) Proceedings of The WALTHAM® International Nutritional Sciences Symposium, Portland, Oregon, USA, p52.

## Associations between longevity and body condition in domestic dogs

- Data collected from primary care consultations Banfield Pet Hospitals® in USA
- Looked at link between being overweight in mid-life on the lifespan of neutered client owned dogs – 10 popular breeds

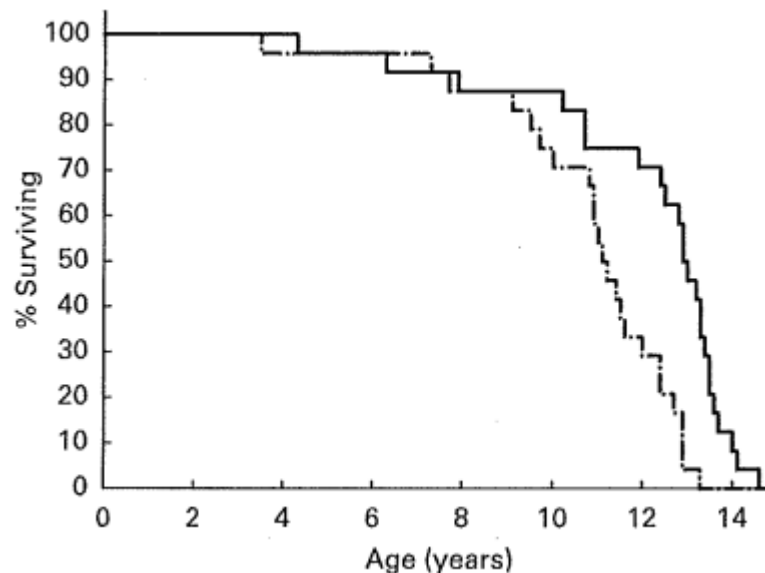


**Reduction in survival probability to 13yrs old for fat group**

# Does Diet Influence Lifespan in dogs?

Lawler *et al* showed impact of energy restriction on lifespan kennel dogs<sup>1</sup>

Increase in median lifespan



# Obesity in Pets

Weight is an issue in the pet dog population

22-40% in developed countries are overweight <sup>1</sup>


<sup>1</sup>German AJ. J Nutr 2006; 136(7 Suppl):1940S-1946S



## ISSUE 1: Pet Obesity

Pet obesity levels continue to rise with 80% of veterinary professionals believing there will be more overweight pets than healthy weight pets in five years' time and 4 out of 5 veterinary professionals report having seen an increase in levels of pet obesity over the last 2 years. This section explores the importance of an appropriate diet for a pet's lifestyle, species and health, as well as how to prevent obesity-related diseases.

**80%** OF  
**VETERINARY PROFESSIONALS**



**BELIEVE THERE WILL BE MORE**

**OVERWEIGHT PETS**  
— THAN —  
**HEALTHY WEIGHT PETS**  
**IN THE NEXT FIVE YEARS**



PDSA PAW report 2014

# Maintaining 'healthy' body weight in senior pets is a challenge

- Number of overweight cats increases with age, and plateaus 4-10 yr
- Fewer overweight and more underweight cats aged 13yr or above (Harper 1998)

Obesity



Loss of LBM  
(sarcopenia)



# Maintaining 'healthy' body weight in senior pets is complex

- Number of factors influence Bodyweight and LBM:  
energy requirement, energy (food) intake, activity/exercise, other factors
- Requires individualisation, no 'one shoe size' approach
  - REGULAR and CONSISTENT monitoring of BW and body condition
  - Portion control, adjusted to the individual
- Diet: ensure adequate energy and protein
  - Palatable foods, highly digestible diets
  - Avoid protein restriction unless clinically indicated

# Digestive Function

- Cats aged 11 years (and above) have reduced ability to digest dietary fat and energy (Harper 1995, Peachey et al., 1999)



## This effect is more pronounced in foods with a lower overall digestibility

Energy digestibility coefficients in young adult and senior cats

Study	Diet	Energy Digestibility (%)		% decrease in Senior
		Young adults	Senior	
Harper (1995) <sup>1</sup>	Diet A	81	74	8
	Diet B	79	74	7
Peachey et al., (1999) <sup>2</sup>	Diet C	84	79	6
	Diet D	91	88	3
	Diet E	91	88	3

<sup>1</sup> data for young adults based on average of 2-4, 4-6 and 6-8 age groups, data for senior based on 12-14 year age group

<sup>2</sup> data for young adults with average age of 3, data for senior based on average age of 11 years

# Implications.....?

- Older cats (above 11yr)
  - are less efficient in obtaining energy (ME) from their food
  - need to consume more food to obtain the same amount of energy (ME) compared to younger adult cats
- Guidance
  - Feeding guides 5-10% higher Vs young adult?
  - Palatable/energy dense foods

# HEALTH WARNING

- No evidence of significant changes in digestive function/efficiency in cats below 11 years of age
  - Increasing feeding guides for cats less than 11 years age may increase risk of weight gain (obesity)!



## Summary

- Increasing life-span and increasing numbers of older pets
  - ‘Healthy’ bodyweight
- Belief that senior is distinct life-stage and has specific nutritional needs
- Key challenges
  - Definition of a senior pet
  - Good evidence base
- Number of changes associated with ageing from which we can infer nutritional guidance

# QUESTIONS?