Who ate all the pies? The growing problem of companion animal obesity

Dr Gavin White

27th February 2014
How did I get into this...

BSc Animal Science (Leeds)

MSc Animal Production (Aberdeen)

DEFRA Employment (Animal Health)

PhD Animal Nutrition (Nottingham)

2000

2003

Postdoctoral Research (Nottingham: SVMS and Division of Animal Sciences)

2008

2013

Teaching Position (Nottingham: Division of Animal Sciences)

Research project on Canine obesity CAB and SVMS

Published Research, Lectures

4 x Animal Science student research projects
Outline

1. The scale of the obesity problem
2. What are the health problems?
3. How are we feeding our pets?
4. What is the role of the owner?
5. What can we do about it?
1. Scale of the obesity problem
Obesity – a human problem...

- In England in 2011, **24% of men** and **26% of women** (aged 16 or over) were classified as obese (BMI ≥ 30)
- Similar values for children (aged 2–15): **31% of boys**, **28% of girls** overweight or obese

*NHS report, 2013*
Same concerns being extended to companion animals...

Millions of fat cats and dogs are being 'killed with kindness'

FAT PETS

Our nation's animals are getting fatter, just like we are. We've got some of the unhealthiest pets in Europe as a result of over feeding and under exercise.

PDSA charity says pets at risk from 'obesity time bomb'
Obesity in animals

- Commonly defined as 15% - 20% or more overweight
- 1 in 4 animals seen in small animal practice are overweight
- Single biggest health issue affecting companion animals in Europe
- Globally, estimated dog obesity levels are between 22% and 40%
- RSPCA estimates half of all dogs and cats in UK to be overweight.
## Canine obesity map!

<table>
<thead>
<tr>
<th>Region</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>% change 2006-2009</th>
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<td>37</td>
<td>+18</td>
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<td>26</td>
<td>35</td>
<td>+14</td>
</tr>
<tr>
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<td>27</td>
<td>34</td>
<td>+10</td>
</tr>
<tr>
<td>N. Ireland</td>
<td>26</td>
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<td>18</td>
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<tr>
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<tr>
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<td>25</td>
<td>19</td>
<td>23</td>
<td>22</td>
<td>-3</td>
</tr>
<tr>
<td><strong>National</strong></td>
<td><strong>21</strong></td>
<td><strong>30</strong></td>
<td><strong>28</strong></td>
<td><strong>35</strong></td>
<td><strong>+14</strong></td>
</tr>
</tbody>
</table>

n ≈ 30,000 dogs (PDSA, 2010)
How do we assess body fat?

Various techniques:

- Dual-Energy X-ray Absorptiometry (DEXA) is precise and reliable but expensive!
- A commonly used alternative is Body Condition Scoring (BCS)
- Commonly based on a 5-point or a 9-point scale
- Subjective assessment
Legislation

Animal Welfare Act 2006

Places a ‘duty of care’ on pet owners to provide for their animals’ basic needs:

- Suitable environment
- **Suitable diet**
- Need to exhibit normal behaviour
- Suitable housing (individual or group)
- Protection from pain, suffering, injury and disease
Obesity increasingly seen as an animal welfare issue

Overfeeding considered to be as cruel as underfeeding

Jan 2007: Using the new Act, RSPCA brought first prosecution of its kind in UK against owners of a clinically obese Labrador ‘Rusty’
2. What are the health problems?
Obesity as a cause of disease

Increased weight bearing

Stress on joints & increased workload for heart

Adipose Tissue (fat)

Actively produces many cell signalling substances:
Hormones (Leptin)
Cytokines (TNFα, IL1β, IL6)

Involved in energy balance, metabolism, Insulin resistance and inflammation

Common feature of obesity in both dogs and cats

Disease
Examples of health issues associated with obesity

- **Dyspnoea** *(Difficulty breathing)*
- **Dermatological problems**
- **Difficulty grooming**
- **Dystocia** *(Difficulty birthing)*
- **Increased risk under general anaesthetic**
- **Orthopaedic disorders** *(Joint problems)*
- **Cardiovascular Disease** *(Increased BP, heart failure)*
- **Diabetes** *(Higher demand for insulin)*
- **Reduced life expectancy**
- **Decreased heat tolerance**

*Decreased heat tolerance*
Risk factors associated with obesity:

- Human-Animal bond
- Owner perception
- Certain diseases
- Feeding
- Gender
- Neutering
- Genetics
- Age
- Activity

Diagram illustrates how these factors are interconnected.
3. How are we feeding our pets?
PAW Report:

• Largest survey of its kind assessing pet wellbeing in UK

• **Aims to gain a deeper understanding of pet ownership behaviours**

• In 2012, surveyed:
  • ~4000 owners
  • ~460 vets/nurses
  • ~550 children
Main pet health and welfare issues:

- The importance of a **suitable diet**
- The importance of training and socialising
- The importance of preventative treatments
- The importance of researching **pet ownership**
More than 53% of dogs are given human food leftovers as a treat.

9% of dog owners believe that food for humans should be a daily part of their dog’s diet.

Only 17% of dog owners look at Body Condition Score and weight before deciding how much to feed.

PAW Report, 2013
How are we feeding our pets?

**Cats:**

**Q: How do cat owners determine how much to feed?**

<table>
<thead>
<tr>
<th>Method</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘Common Sense’</td>
<td>27%</td>
</tr>
<tr>
<td>Past Experience</td>
<td>21%</td>
</tr>
<tr>
<td>Eats as much as he or she likes</td>
<td>12%</td>
</tr>
<tr>
<td>Seek Veterinary Advice</td>
<td>11%</td>
</tr>
<tr>
<td>Packet Guidelines</td>
<td>5%</td>
</tr>
<tr>
<td>Animal Weight or Body Condition Score (BCS)</td>
<td>5%</td>
</tr>
</tbody>
</table>

PAW Report, 2013
- Annual growth of treat sales: 9%
- Why feeding more treats? Guilt?
- Fed in addition to main meals?
- What about scraps from the table?

Difficult to determine true daily calorie intake for the animal
Current undergraduate research projects

Aiming to better understand:

**Owner perceptions/motivations for giving treats**
- Notions of guilt, the need to reward etc.

**Nature of animal–human bond and how this affects canine weight and exercise**
- Humanising, owner behaviour, exercise patterns, use of treats as a training aid etc.

**The role of treats in canine nutrition and obesity**
- Types of treats, relationship with meals, marketing etc.
“Pets’ diets are being influenced by human emotion, rather than an understanding of what they really need....”

4. What is the role of the owner?
Risk factors associated with obesity:

- Human-Animal bond
- Owner perception
- Certain diseases
- Feeding
- Genetics
- Age
- Activity
- Gender
- Neutering
Do owners even recognise obesity?

- University of Nottingham study (SoB and SVMS staff)
- Questionnaire used to collect data from dog owners attending a vet practice
- Owners were asked a range of quantitative and qualitative questions about their relationship with their dog
- As part of the study, owners were asked about the weight status of their dog
Owners of overweight dogs tend to perceive them to be slimmer than they really are.

Owner disagreement significantly greater (P=0.005) for the overweight dogs.

Owners of overweight dogs tend to perceive them to be slimmer than they really are.
“not fat, all muscle” and the dog was “solid”  
*Vet assessed BCS of 4*

Vet was “getting a bit obsessed about weight loss”  
*Vet assessed BCS of 4*

“I know he’s overweight, but when you look into those big brown eyes you have to give him a biscuit... we’re two of a kind !”  
*Vet assessed BCS of 3.5*
Canine obesity: is there a difference between veterinarian and owner perception?

G. A. White, P. Hobson-West*, K. Cobb, J. Craigon†, R. Hammond and K. M. Millar*

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“The article by White and others in this issue of JSAP, serves as a timely reminder of how far we still have to go in understanding owner psychology....”

Alex German, JSAP Editorial (Dec 2011)
Risk factors associated with obesity:

- Human-Animal bond
- Owner perception
- Certain diseases
- Feeding
- Gender
- Neutering
- Genetics
- Age
- Activity

Understanding the risk factors is crucial for proactive health management in pets.
Human–Animal bond

**COMPLEX !!!**

- Pets often seen as an extension of ourselves
- Pets can facilitate interaction with others “social lubricants”

- Pets commonly fulfil many roles for the owner:
  - *Companion*
  - *Friend*
  - *Family member* “one of the family”
  - *Child* “he/she’s my baby” (owner may use baby talk...)

This relationship can lead to ‘HUMANISATION’ where owners indulge pets as “fellow humans”
Always a beneficial relationship?

Research findings on the human-animal bond and obesity:

**Misinterpretation of animal’s needs**
- Owners of obese animals tend to misinterpret every behaviour as a request for food
  - *Kienzle et al, 1998; German, 2010*

**Lifestyle ‘overlap’ between pet and owner**
- Owners of obese animals are often overweight or obese themselves
  - *Kienzle et al, 1998; Bland et al, 2009*
5. What can we do about it?
Clinics and Campaigns

- **Weight management clinic**
  - Part of small animal teaching hospital (University of Liverpool)
  - First of its kind in Europe
  - Referral service for cats/dogs that are overweight

- **Pet obesity websites**
  - ‘Pet Fit Club’
  - Annual pet slimming competition
  - Recruitment of obese pets from all over the UK
  - General information
  - Health risks
  - Prevention
So what can we do?

Talk to vet
- Vets are most common source of advice for owners
- Design an individual weight loss programme

Education?
- Owners (and vets?)
  - BCS charts and the use of BCS more routinely
- Children?
  - Majority of vets, vet nurses and owners believe the 5 welfare freedoms should be part of the National Primary Curriculum (*PAW Report 2013*)
Controlling weight in animals

- Decreasing the amount fed of a regular pet food may lead to deficiencies of protein, minerals or vitamins

- A specific weight reducing food might be recommended

- Many of these diets contain a high fibre content which dilutes calories and reduces overall consumption
Other treatments

- New obesity drugs launched in 2007
- Prescribed for use in **dogs**:
  
  - **‘Slentrol’** licensed in US and Europe
  - **‘Yarvitan’** licensed in Europe only

  – “As an aid in the management of overweight and obese dogs. To be used as part of an overall weight management programme which also includes appropriate dietary changes and exercise practice.”

The drugs block a protein (**microsomal triglyceride transfer protein**) that is normally involved in fat absorption in the small intestine

**Reduced fat absorption and increased satiety**
New weight management guidelines for dogs and cats in US

- Released Jan/Feb 2014
- American Animal Hospital Association (AAHA)
- Tips and strategies for vets

- Guidance on:
  - Calorie restriction
  - Diet selection
  - Exercise
  - Strategies to help modify pet and owner behaviour
To sum up...

- Obesity is single biggest health issue affecting companion animals in Europe

- Obesity/overfeeding is an animal welfare issue (with legislation to prosecute)

- Many health issues associated with obesity in animals

- Several risk factors; some are dog-centred (breed, age, neuter status etc.), some require better understanding of owner psychology and behaviour

- Obesity can be managed through an effective weight loss programme (may include specific dietary products...)

- Drugs are on the market to aid weight loss - *but do they get to the root of the problem?*
More research needed...

- **Owner psychology and behaviour**
  - Problem may be with the animal but need to focus more on the attached owner!
  - Perception of obesity, owner–pet relationship, feeding.

- **Vet–owner communication**
  - How do vets communicate with owners about the weight status of their pets?

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Successful research carried out in this field here at Nottingham (CAB/Biosciences and SVMS) – many more research questions to ask…!
Thank you – any questions?

“Today I ate two bowls of dog food, a sandwich crust, some spaghetti that fell on the floor, half of your cat food, a wet tea bag, three bugs and the inside of a sneaker. How many grams of fat is that?”