Body condition and location of fat stores in the ageing horse

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Background

- Perception that as horses age they lose body condition
- Domestic horse population is becoming fatter (21-66% overweight) (Stephenson *et al.*, 2011; Wood *et al.*, 2016)
- Unclear at what age changes in body condition occur and become a potential health issue

Background

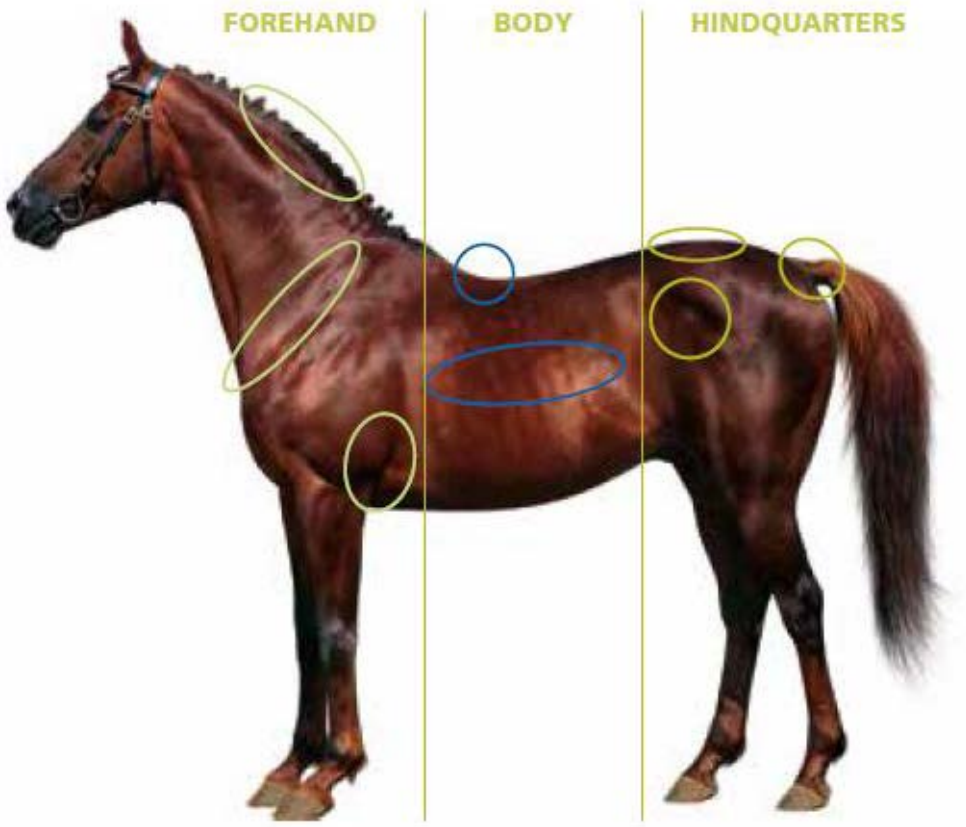
- Horses aged >15 years classed as veterans in many competitions
- Developments in veterinary care, management practices and nutrition

→ increasing elderly equine population that is active with potential for weight gain

- **Study aim:**
  - **To compare the body condition score (BCS) and location of fat stores in horses of different ages**

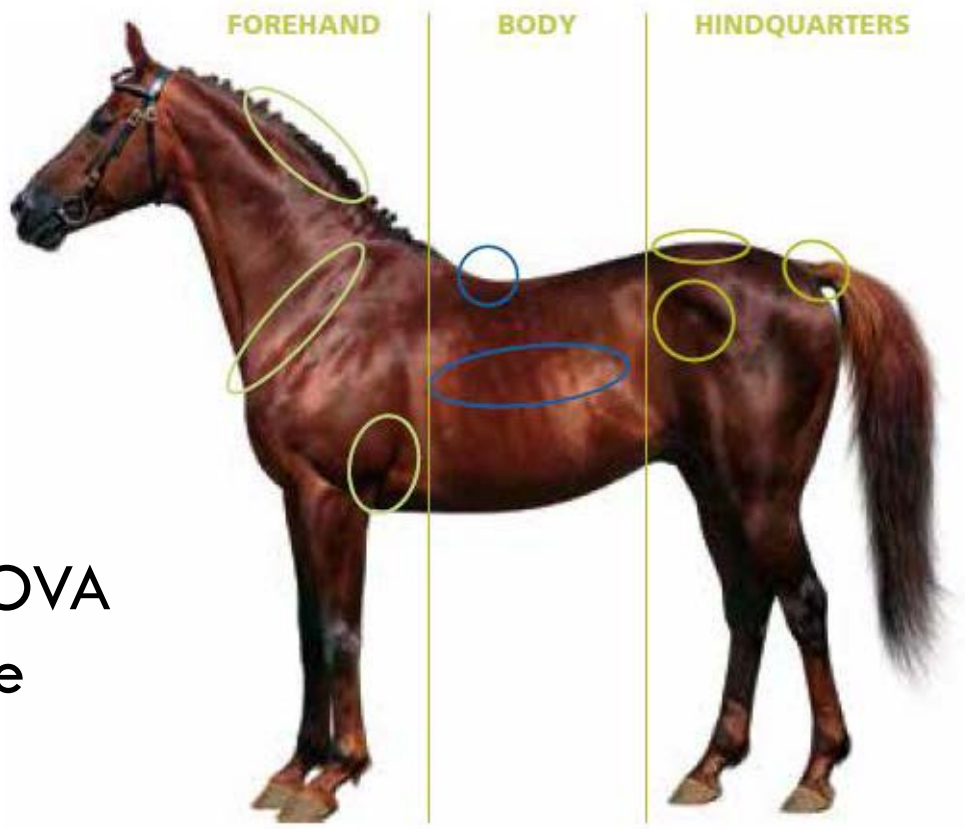
Materials and Methods

- Sample of 103 equines from three livery yards in NI
  (Nov & Dec 2015)
  - 55 ponies & 48 horses
- Assessed BCS (scale 0-5)
- 8 points on the body
- Mean BCS
  - Overall BCS, forehand, body and hindquarters
  - All data was normally distributed



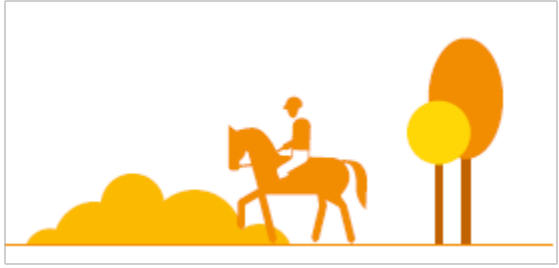
Materials and Methods

- Animals categorised by age:
  - Young ≤ 6 years (*n*=25)
  - Adult 7-20 years (*n*=63)
  - Old 21-26 years (*n*=9)
  - Geriatric ≥27 years (*n*=6)



- Analysed using one-way ANOVA to determine the effect of age

Results



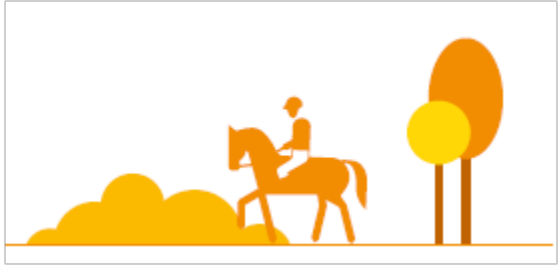
Sample Population

- Age range = 2 – 35 years
- BCS = 2 – 5 (mean 3.6 ± 0.06)

Table 1. Percentage of animals that were underweight, ideal weight or overweight

	% of Animals		
Age Cat.	**Underweight** (0 – 2.9)	**Ideal Weight** (3 – 3.5)	**Overweight** (3.6 – 5)
Young (*n*=25)	4	40	**56**
Adult (*n*=63)	6	30	**64**
Old (*n*=9)	22	22	**56**
Geriatric (*n*=6)	**50**	33	17

Results



Effect of age on BCS

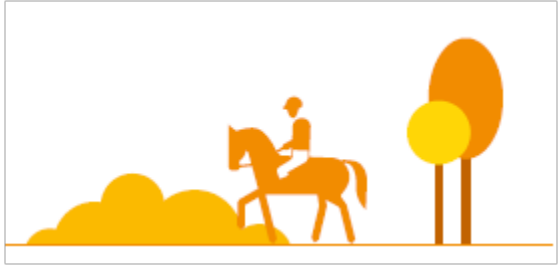
- Overall trend – geriatrics of lower BCS overall and in all locations
- Geriatrics significantly lower BCS to adult horses ($p<0.05$)

Table 2. Mean BCS of animals in each age category

	Mean BCS (± s.e.)			
Age Cat.	**Overall**	**Forehand**	**Body**	**Hindquarters**
Young	3.7 (0.15) a,b	3.6 (0.13) a,b	3.9 (0.16) a	3.8 (0.17) a
Adult	3.7 (0.07) a	3.7 (0.07) a	3.8 (0.09) a	3.7 (0.08) a
Old	3.4 (0.15) a,b	3.4 (0.17) a,b	3.5 (0.21) a	3.3 (0.15) a,b
Geriatric	**3.0** (0.36) b	**2.9** (0.31) b	3.2 (0.46) a	**2.9** (0.38) b

a,b: Means in the same columns bearing different letters differ significantly $p<0.05$

Results



Location of fat stores

- Trend in all age groups to store more fat in the body region ($p>0.05$)
- Old animals = lowest BCS on hindquarters
- Geriatric animals = lowest BCS hindquarters and forehand

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Discussion

- Age related reduction in BCS was recorded
  - No data on health or management was gathered
  - Cause of BCS reduction is unknown
- Equines lost condition from hindquarters followed by the forehand
- Maintained condition in the body region
- Maintaining condition did not become difficult until horses reached their late 20's
  - Better veterinary and dental care
  - Provision of specifically designed feedstuffs

Conclusions

- A large proportion of the NI equine population may be at risk of health issues associated with being overweight
- Horses maintained body condition until late 20's
  - Feeding in preparation for condition loss at a younger age could lead to weight gain
  - Encourage to feed for the individual not what is expected

Further Research

- *What are the management and feeding practices and health issues associated with age related BCS changes?*
- *Does the management of horses in NI contribute to the problem?*

References

- Stephenson, H.M., Green, M.J., & Freeman, S.L. (2011). Prevalence of obesity in a population of horses in the UK. *Veterinary Record*, 168: 131.

- Wood, S.J., Allen, E., Corr, A., Lee, M., & Magee, A. (2016). Ability of horse and pony owners to estimate body weight and assess body condition score. In: *Taste, Nutrition and Health of the Horse*. Proceedings of the 8th European Workshop on Equine Nutrition, 16-17th June 2016, Dijon, France.