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 $\leq 6$ years ($n=25$)
  - Adult 7-20 years ($n=63$)
  - Old 21-26 years ($n=9$)
  - Geriatric $\geq 27$ 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

<table>
<thead>
<tr>
<th>Age Cat.</th>
<th>Underweight (0 – 2.9)</th>
<th>Ideal Weight (3 – 3.5)</th>
<th>Overweight (3.6 – 5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young (n=25)</td>
<td>4</td>
<td>40</td>
<td>56</td>
</tr>
<tr>
<td>Adult (n=63)</td>
<td>6</td>
<td>30</td>
<td>64</td>
</tr>
<tr>
<td>Old (n=9)</td>
<td>22</td>
<td>22</td>
<td>56</td>
</tr>
<tr>
<td>Geriatric (n=6)</td>
<td>50</td>
<td>33</td>
<td>17</td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>Age Cat.</th>
<th>Overall (± s.e.)</th>
<th>Forehand (± s.e.)</th>
<th>Body (± s.e.)</th>
<th>Hindquarters (± s.e.)</th>
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<tr>
<td>Young</td>
<td>3.7 (0.15) a,b</td>
<td>3.6 (0.13) a,b</td>
<td>3.9 (0.16) a</td>
<td>3.8 (0.17) a</td>
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<tr>
<td>Adult</td>
<td>3.7 (0.07) a</td>
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<td>3.8 (0.09) a</td>
<td>3.7 (0.08) a</td>
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<tr>
<td>Old</td>
<td>3.4 (0.15) a,b</td>
<td>3.4 (0.17) a,b</td>
<td>3.5 (0.21) a</td>
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<td>Geriatric</td>
<td>3.0 (0.36) b</td>
<td>2.9 (0.31) b</td>
<td>3.2 (0.46) a</td>
<td>2.9 (0.38) b</td>
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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
