

Obesity

- ◆ The most common nutritional disorder of companion animals
- ◆ Associated with poor health status/chronic health conditions
- ◆ An increasing welfare problem



Methods

- ◆ Cross-sectional survey of horse/pony owners in Great Britain
- ◆ Thirty veterinary practices randomly selected horse/pony owners to complete a postal questionnaire
- ◆ Owners estimated body condition score using modified Carroll and Huntington method (1-6 scale, Fig. 1)
- ◆ Horses scored as 5 (fat) or 6 (very fat) were classified as obese (horses scored 1-4 were not obese)
- ◆ Multivariable logistic regression applied to identify and quantify risk factors associated with obesity

Fig. 1: Modified Carroll and Huntington method of assessing BCS, reproduced with permission from NEWC.

Table 1: Multivariable logistic regression model of risk factors for equine obesity in 785 veterinary-registered horses and ponies in Great Britain (including 246 obese and 539 non-obese horse and ponies)

Variable	Category	Odds ratio	95% CI	P value
Breed	Thoroughbred/Thoroughbred crosses	1.00		<0.001
	Warmblood/Warmblood crosses	1.71	0.91-3.19	
	Arab/Arab crosses	1.04	0.47-2.29	
	Welsh breeds	3.47	1.94-6.20	
	Other UK Native breeds/Native crosses	3.15	1.72-5.74	
	Draught/Draught crosses	7.32	3.14-17.07	
	Cob/Cob crosses	5.75	2.58-12.82	
	Other	2.36	1.15-4.86	
Ease of maintaining weight	Normal	1.00		<0.001
	Good doer/easy keeper	3.68	2.56-5.30	
	Poor doer/hard keeper	0.38	0.11-1.31	
Usual use	Competition	1.00		0.002
	Pleasure	2.45	1.38-4.35	
	Non-ridden	2.86	1.49-5.48	

Aims

- ➔ Estimate equine obesity prevalence
- ➔ Identify risk factors for obesity

Results

- ◆ Total of 792 useable questionnaires were returned
- ◆ Prevalence of obesity was 31.2% (95% CI 27.9-34.2%)
- ◆ 15.8% of animals (95% CI 13.1-18.4%) had a history of at least one previous episode of laminitis
 - ◆ 20.9% of obese animals had history of laminitis compared to 13.5% of non-obese animals (P=0.01)

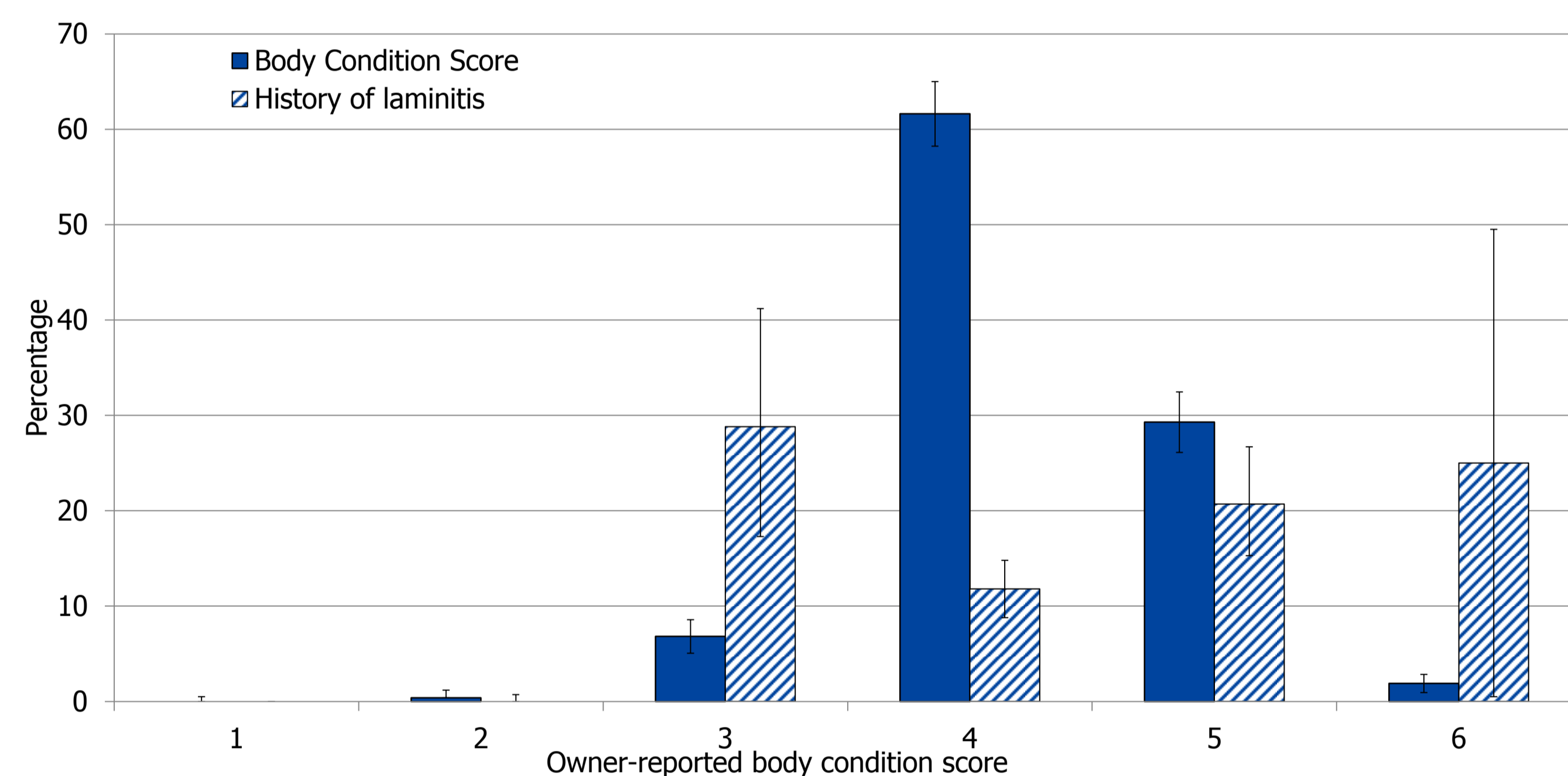


Fig. 2: Distribution of body condition score in the sample population of 792 veterinary-registered horses/ponies in Great Britain and corresponding owner-reported history of laminitis, provided for 736 horses/ponies



Discussion

Breed

- ◆ Differences in baseline maintenance energy requirement between breeds
- ◆ Native breeds (e.g. Welsh, draught, cob) adapted to thrive in harsh environments – “thrifty genotype”
- ◆ Risk of obesity increases when managed on a higher plane of nutrition

Maintaining weight

- ◆ Is there a genetic predisposition to ease of weight maintenance?
- ◆ Owners perceptions of how readily horses maintain weight may influence their opinion of dietary requirements
- ◆ Owners may be justifying high BCS as the horse is a “good doer”

Usual use

- ◆ Competition horses managed differently to non-competition horses
- ◆ Fewer competition horses had free access to pasture (previously reported as a risk factor for obesity)
- ◆ Competition horses exercised at increased intensity compared to others
- ◆ Insulin sensitivity increases with exercise, decreasing fat mass

Conclusions

- ◆ Large proportion of obese horses but potentially under-estimated
- ◆ Highlights need for continued efforts to raise awareness about obesity
- ◆ Identification of horse level risk factors will enable optimal targeting of owner education (identifying and monitoring obesity)