Equine obesity and the role of the veterinary nurse

Equine obesity is defined as a medical disease in which excess body fat has accumulated to such an extent that it has an adverse effect on the general health of the horse. Obesity is a cause for concern, with one-third of the equine population in the UK being regarded as obese, although owner recognition of obesity in horses is an inherent problem, with many underestimating the body condition or weight of their horse. This is further complicated by the fact that with larger framed horses, or horses that are already overweight, assessing body condition is more difficult. There are a number of ways to assess body condition and the most practical means of regular assessment is body condition scoring, although this is regarded as subjective. As with many diseases and disorders, the cause of obesity is multifactorial. However, the most common reason for a horse to become obese is overfeeding, coupled with a lack of exercise. Obesity can be addressed with client education and veterinary nurses can provide advice on weight management programmes. However, these need to be tailored to the individual horse and owners need to recognise that they are entering into a long-term commitment.

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With obesity becoming an increasingly common issue among many domesticated animals, it is clear that more needs to be done to educate owners and industry professionals on how to manage their animals' weight. This article explores the issue of obesity within the equine population, looking into the role of the veterinary nurse and how they can help with the management of equine obesity. Multiple studies have highlighted the scale of this issue, with around one-third of the UK's equine population reportedly being considered obese (Giles et al, 2014; Robin et al, 2015; Furtado et al, 2020). Owners need to be able to recognise that their horse is obese and be prepared to do something, but as most of the health issues that arise secondary to obesity do not result in any obvious clinical signs of disease, and are not immediately life-threatening, it is easy for owners to disassociate between the two (Owers and Chubbock, 2013).

When is a horse considered obese and which horses are more at risk?

In order to understand how to prevent equine obesity, it is first important to recognise what the term obesity actually refers to. Obesity is a qualitative term (Wyse et al, 2008), defined as an excess build-up of adipose tissue resulting in fat deposits being formed throughout the body. These will often be visible in an obese horse and become more prevalent as their condition worsens (Thatcher et al, 2012). The role of adipose tissue is to provide a reservoir of fatty acids that can be used as an energy source during the postprandial fasting state. However, adipose tissue itself contributes little to basal energy expenditure as it uses very little energy (Laflamme, 2012). Obesity has also been defined as a disease in which excess fat has been deposited to such an extent that it has an adverse effect on general health (Geor and Harris, 2013).

Robin et al (2015) reported that stockier types such as Cobs, draught horses and native breeds are more at risk of obesity than breeds such as Thoroughbreds (*Table 1*). A possible contributing factor to this trend was found in a study by Furtado et al (2020), which highlighted that many horse owners struggled to identify when their horse was overweight, often mistaking fat deposits for the horses' natural shape. This misconception was especially common in owners of stockier breeds, where excess weight may be less noticeable than in a finer built breed, especially if the owner is unfamiliar with the ideal breed conformation. This suggests that more needs to be done to educate the owners of these breed types with regards to ideal body shape.

Another area to consider is the correlation seen in horses kept for different purposes. For example, Harker et al (2011) investigated the prevalence of obesity in horses competing in different disciplines and found that showjumpers were least likely to be overweight, followed by those competing in dressage. Obesity cases were highest in those being shown in hand, likely because the horses in this discipline do not use as much energy as those being ridden in other disciplines (Harker et al, 2011). Horses not kept for use in competitions were also more at risk of obesity, with those ridden for pleasure being twice as likely to be obese, and those not ridden being at three

Table 1. Relationship between breed and the prevalence of obesity in 785 horses and ponies, of which 246 were considered obese

Breed	Odds ratio	95% CI	Likelihood ratio statistic X^2 *P* value
Thoroughbred/Thoroughbred crosses	1.0	Reference	<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	

Adapted from Robin et al (2015). CI= confidence interval.

times the risk compared to competition horses (Robin et al, 2015). This demonstrates the benefit of horses having regular exercise, being ridden and regularly worked. Therefore, it may be beneficial to educate the owners of non-ridden horses on ways their horse can be exercised, such as through lunging, the use of a horse-walker or by making more use of the environment to ensure horses are 'working' for their food.

Age is another important factor to consider, with older horses potentially at higher risk of obesity, particularly once they retire. When out of work, these horses' activity level will decrease and they will consequently be using less energy, whereas young horses will likely be more active, and those still growing have higher energy requirements putting them at a lower risk of obesity (Giles et al, 2014). *Table 2* further outlines some of the potential causes of obesity.

Where can the veterinary nurse help?

Veterinary nurses have many roles and responsibilities but there are skills that are often overlooked, including building rapport, ensuring good communication and providing educational interventions (Shilcock, 2006). However, a study by Belshaw et al (2018) reported that neither owners or veterinarians were confident about which services veterinary nurses could, or should, provide. This suggests that more clarity is required regarding the role of the veterinary nurse within the multidisciplinary team, and better signposting of the skills and roles that veterinary nurses bring to the veterinary practice is needed.

For example, veterinary nurses in small animal practice will often be involved with running nursing clinics, the main targets of which are education and support for owners, such as weight loss clinics. The ambulatory nature of equine practice can pose more of a challenge in providing similar 'clinics' for horse owners, as the main contact for horse owners will be the veterinary surgeon. However, this can be overcome by the veterinary practice outlining the role of the equine veterinary nurse within the team in more detail and making use of the practice website to highlight the additional support that veterinary nurses can provide. This would include providing 'evidence-based' information and guidance to horse owners on subjects such as body condition scoring, providing a balanced diet to meet their horses' nutritional needs, suitable exercise and management plans, as well as how to identify health issues associated with poor weight management, such as laminitis (Saul, 2019). This could be done in many ways, such as through demonstrations, talks and posters or leaflets outlining the risks and clinical signs associated with equine obesity. These could also include advice on specific weight loss techniques, such as the benefit of soaking hay to reduce its non-structural carbohydrate content. As shown in *Figure 1*, this increases the rate of weight loss compared to feeding dry hay. It is suggested to give 1.5% of the horses' ideal bodyweight in hay rations per day, the weight of which should be measured before soaking (Argo et al, 2015).

As indicated above, small animal practices routinely utilise veterinary nurses to provide weight loss clinics, and this has been met with some success in supporting clients with managing their animals' weight (Saul, 2019). While this is a less commonly used tool in

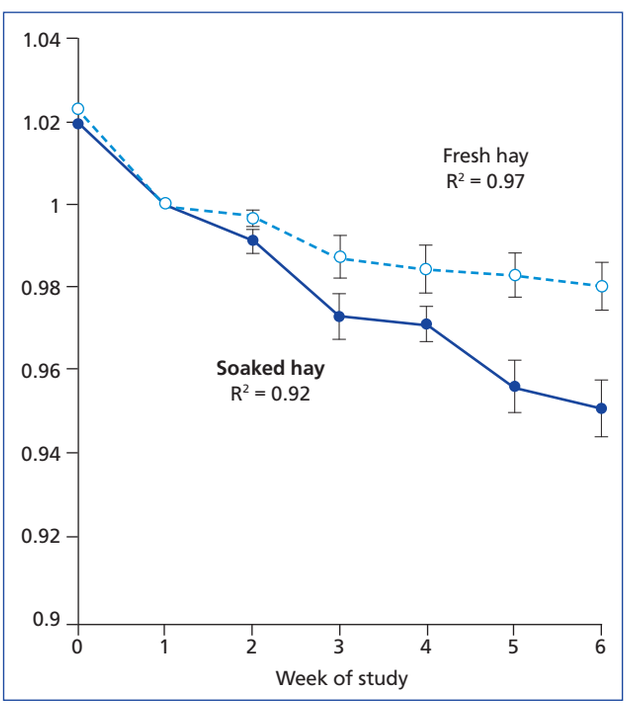

Figure 1. Weight loss for obese horses and ponies comparing the difference between soaking and not soaking their hay (Argo et al, 2015).

Table 2. Potential causes of obesity

Potential cause	Considerations
Overfeeding	Individual energy requirements are affected by external factors such as environmental conditions and level of exercise (including activity during turnout) Use of high caloric density foodstuffs for horses and ponies spending much of the day in confinement and being used for occasional riding activities Horses/ponies kept permanently on pasture may have a greater caloric intake than required, especially during spring and early summer with an abundance of nutrient-rich forage
Seasonal changes	In wild animals: appetite is highest during spring and summer to coincide with a plentiful supply of forage and in winter appetite and metabolic rate decrease and energy stored in white adipose tissue is mobilised – these seasonal adaptations are also apparent in domesticated ponies Horses and ponies nowadays have access to pastures with 'improved' forages and across the seasons these have a much higher nutritional value Husbandry practices in winter months with additional hay and energy dense foodstuffs and provision of rugs and shelter will mitigate any winter-associated weight loss
Genetics	While there is no published research in this area, it has been suggested that certain lines of horses and ponies have inherited genetic traits that allow them to better utilise poor or limited forage
Hormonal regulation	Two hormones – leptin and ghrelin are recognised to have a major influence on energy balance Ghrelin: primarily produced in the stomach; functions as an appetite-stimulatory signal and short-term mediator of energy balance (hunger hormone); may play a role in appetite regulation in horses Leptin: primarily produced by adipocytes; provides information to the brain regarding availability of body fat stores; regulates feeding behaviour by binding to the central nervous system (hypothalamus) and modulating neuronal activity in appetite control centres; it has been hypothesised that chronic over-feeding can lead to the development of leptin resistance, which may contribute to the maintenance of obesity
Lack of physical activity	The exact role of physical activity in the development of obesity in horses and ponies remains unknown.
Adapted from Geor and Harris (2013)	

equine practice, a similar approach to supporting clients with a tailored weight loss programme for their horse may also prove successful. When developing a weight loss and management programme, it is important that the horse is under the direct care of a veterinarian and that the veterinary nurse is in communication with the veterinarian at all times. Owner compliance can often be an issue and good communication is therefore key to ensuring the client understands what is expected of them and to keep their motivation high. For example, it can be beneficial to record measurements so that owners can see their horse's progress (Porsani et al, 2020). Bard et al (2017) highlighted the importance of human-behaviour change, suggesting the veterinary consultation needs to be a more mutual, relationship-centred communication, which would support client communication and resultant behaviour change. Veterinary nurses are in a good position to support and implement this approach to communicating with clients, especially with subjects that can be quite emotive and complex, such as obesity.

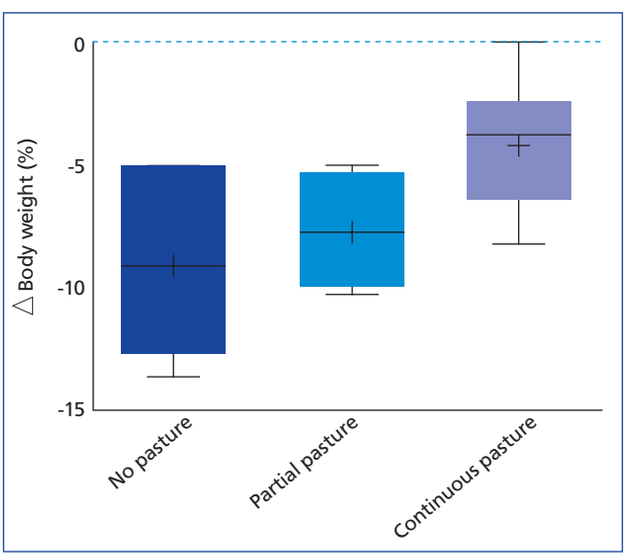

Figure 2. Comparison between the mean changes in body weight of horses with different levels of access to grazing (Gill, 2016).

A good point to discuss with a client would be the restriction of turnout, to reduce their horses' access to grass. However, while it has been reported that horses without access to grass will often lose weight faster (*Figure 2*), the complete absence of turnout may be unsuitable and even detrimental for some individuals, so the horse's welfare and mental wellbeing should be considered at all times. This is where listening to the individual needs of the horse becomes important, so discussing options such as limiting turnout (preferably into fields with poor quality grazing), making the outdoor environment more complex, and the use of a grazing muzzle may be useful suggestions (Gill, 2016; Longland et al, 2016).

KEY POINTS

- The literature suggests that one- third of the UK population of horses is obese.
- Consideration should be given to the purpose the horse is used for, not just the breed of horse, when looking at the perceived risk for obesity.
- Veterinary nurses are trained in communication skills and therefore are an ideal interface between veterinary surgeons and owners in providing advice on equine obesity.
- Human behaviour change is integral and needs to be included in any discussion surrounding the management of a horse that is obese.
- Social media could be used more effectively to raise awareness of equine obesity.

The 1-9 body condition score scale proposed by Kohnke (1992) is a common way to assess a horses' weight. A horse scoring 7 or above is considered obese, meaning it is estimated that at

least 20% of their overall body weight is from fat (Rendle et al, 2018). While this scale acts as a good guide when assessing a horses' body condition score, its reliance on a qualitative system makes it subjective.Dugdale et al (2012) evaluated the accuracy of this scale and their results showed the scale was fairly accurate when determining if the horse was within a healthy weight range. However, a previous study by Dugdale et al (2010) reported that this scoring system became less reliable when assessing obese horses during the early stages of a weight loss programme. Very little change in body condition score was observed during the 12 week study period despite the 11.4% ± 1.9% loss in body mass observed (Dugdale et al, 2010). These findings suggest that when guiding the horses' owners through a weight-loss programme, it is important to express to them that changes may not be visible initially. This may help to keep owners motivated to continue with the weight management plan, without worrying about not seeing immediate results.

The use of social media could be another effective technique to raise awareness of equine obesity. Examples of popular platforms include Facebook, Twitter and YouTube. These platforms provide an ideal opportunity to communicate and build relationships with clients and the ability for content to be shared makes social media a useful tool for reaching a wider audience. It has been shown that the popularity of a social media post can have an impact on how likely people are to listen to the message being put across. Therefore, creating engaging content is more likely to have a positive effect (Smith and Gallicano, 2015). Some advice for increasing engagement includes using images to attract attention, linking useful resources such as websites giving information on obesity, or sharing articles about success stories, which may motivate others to start their horses' weight loss journey (Chang et al, 2015).

Conclusion

With research suggesting that approximately one-third of the UK population of horses is obese, it is clear that more needs to be done by veterinary practices with regards to recognising this problem and providing client education. With many veterinary practices providing healthcare programmes to horses, more targeted advice is required. The veterinary nurse can play a valuable role in the provision of client education, in ensuring that weight loss management programmes are tailored to individual horses and in making sure their progression is monitored throughout. Social media is also a useful platform that veterinary practices could use to engage with the horse owner community. EQ

Conflicts of interest

The authors have no conflicts of interest to declare.

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