

# Weight management and feeding requirements for geriatric donkeys

Many donkeys are now kept as pets rather than working animals, meaning they often live longer – many now reach 20 years old and are classed as geriatric. Weight gain is common in geriatric donkeys as they usually live a sedentary life because of their age, so dietary management of these donkeys is essential to help to prevent health problems such as laminitis and hyperlipaemia. It is important that vets and registered veterinary nurses have an understanding of donkey nutrition and feeding.

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A diet based on fibrous forages and limited grazing is usually sufficient for most donkeys (Burden, 2011). However, some geriatric donkeys may require specialist feeding, especially if they also have dental disease. There is a lack of empirical evidence relating to weight management and nutritional requirements in geriatric donkeys, so these concepts will be discussed generally in this article, with reference made to geriatric donkeys where possible.

## Feeding geriatric donkeys

Healthy geriatric donkeys mostly require a basic diet of good quality barley, oat or wheat straw, and limited access to grass. Donkey-specific vitamin and mineral requirements have not been established, but recommendations for horses can be extrapolated, and appear to provide adequate levels (Evans et al, 2021). Provision of adequate vitamins and minerals can be achieved by allowing access to fresh grazing and an equine-specific mineral lick, vitamin or mineral supplement, or balancer (Evans et al. 2021). Donkeys require a diet high in fibre and low in calories. Donkeys will eat the equivalent of 1.3–1.7 % of their bodyweight in dry matter each day, for an average 180 kg donkey this equates to 2.1–3kg of dry matter per day (Burden et al, 2013).

When caring for geriatric donkeys in practice, it is always a good idea to ask the owner to bring in feed from home. This will ensure that the diet is kept the same and will avoid any unnecessary changes to the diet which could lead to colic or hyperlipaemia. This is a life-threatening condition that should be treated as an emergency.

If the donkey's diet needs to be changed long term following veterinary treatment, the vet or registered veterinary nurse (RVN) should fully involve the owner in the formulation of a new treat-

ment plan, as this will encourage a higher level of concordance (Gerrard, 2015).

## Assessment of weight and body condition scoring

It is important to know how to assess the weight of a geriatric donkey. Often the first sign of deteriorating health is gradual weight loss (Burden and Bell, 2019). A concern with geriatric donkeys is that weight loss can be disguised under a thick coat (Evans et al, 2021). This would be particularly relevant in a geriatric donkey suffering from pituitary pars intermedia dysfunction, as a thick coat is often seen as a clinical sign (Burden, 2011). Weight gain is easier to deal with if it is noticed early on (Burden and Bell, 2019). The most accurate way to assess the weight of a donkey would be to use a correctly calibrated electronic weighbridge. However, most owners do not have access to this type of equipment (Burden and Bell, 2019). Horse weigh tapes are inaccurate for donkeys (Barrio et al, 2019), therefore donkey-specific weigh tapes should be used to estimate the weight of a donkey. It would be useful to teach the owner how to use the weigh tape and encourage them to purchase one. The donkey's weight can then be monitored over time, which will give an idea of any trends so any notable increase or decrease in weight can be identified quickly and interventions put in place.

The weight of a donkey can also be estimated using The Donkey Sanctuary's (2014) weight estimator (*Figure 1*). This is calculated using two measurements, the height of the donkey and a measurement of their heart girth area. The height measurement is taken using a measuring stick and is read off at the highest point of the withers. The heart girth measurement is taken by passing a measuring tape around the bottom of the donkey's chest as far forward as possible and close as possible to the front legs (The Don-

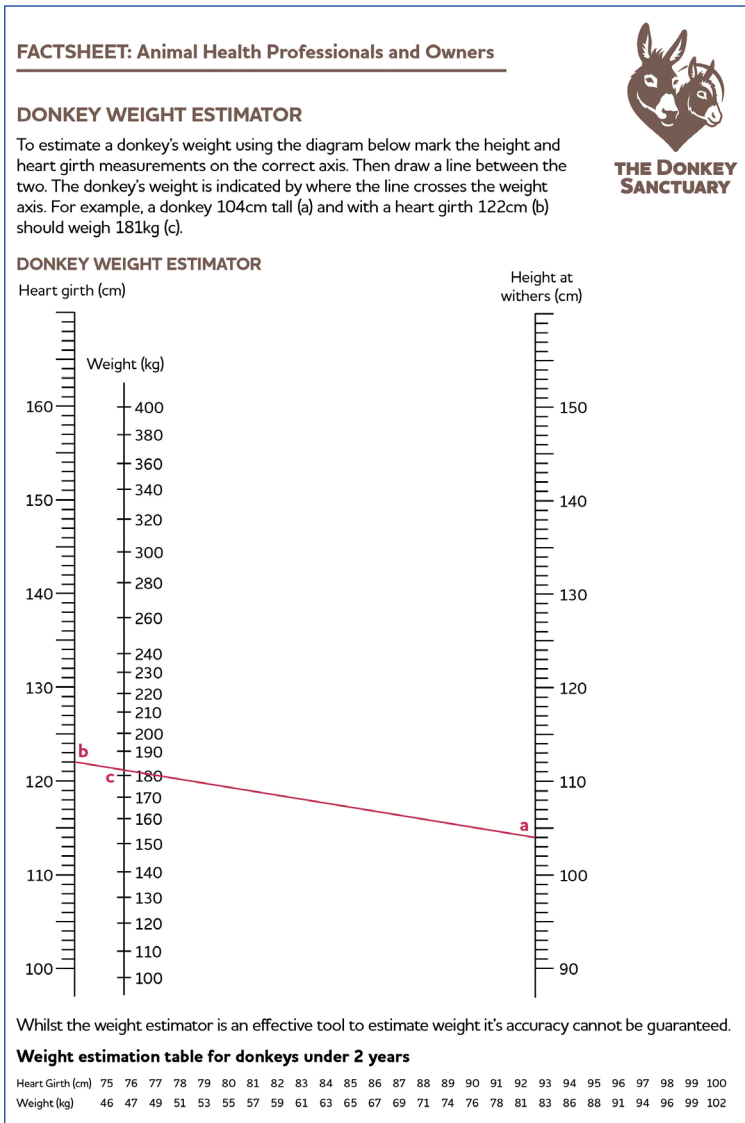


Figure 1. Donkey weight estimator from The Donkey Sanctuary (2013a).

key Sanctuary, 2014). Both the height and girth measurements can then be marked on the weight estimation chart, and the donkey's estimated weight can be read off the centre scale by drawing a line between the two measurements (The Donkey Sanctuary, 2013a, 2014). The heart girth measurement should always be taken in the same location and by the same person, to ensure consistency in the readings.

Another way to assess the weight of donkeys is to perform body condition scoring on them. A body condition score for a donkey requires a different technique to that used in horses, as donkeys lay down fat stores in more localised areas and have a different body shape (Burden, 2011). The donkey has an angular frame alongside a pendulous abdomen, which is often incorrectly described as 'pot-bellied' (Burden, 2011). The Donkey Sanctuary (2013b) has developed a body condition scoring system for donkeys (Figure 2). Five specific areas are assessed: neck and shoulders, withers, ribs and belly, back and loins, and hindquarters (Burden and Bell, 2019). The donkey is allocated a number following body condi-

tion scoring, with a score of 5 being obese (Figure 3) and 4 being overweight (Figure 4). The owner can be taught to body condition score their donkey. Performing this monthly and recording the measurements is recommended, as this will enable the score to be monitored over time. Interventions can then be implemented with support and advice from the vet or registered veterinary nurse.

Performing body condition scoring can be more challenging in geriatric donkeys as they may have large crests and pads of retained fat that are left over from a previous period of obesity (Evans et al, 2021). Over time, these fat pads will calcify and become permanent, regardless of any dietary changes (Burden and Bell 2019). These crests and pads may hide poor fat cover and muscle wasting and lead to inaccuracies in the body condition score (Evans et al. 2021). Registered veterinary nurses and vets should be aware of this when teaching owners of geriatric donkeys to condition score their donkeys.

### Feeding the overweight geriatric donkey

Obesity is a significant welfare problem and may predispose the donkey to several diseases (Morrow et al, 2011). Causes of obesity include an inappropriate diet, lack of exercise, issues with other donkeys, separation, grief and equine metabolic syndrome (Burden and Bell, 2019).

Osteoarthritis is common in the axial and appendicular joints of geriatric donkeys (Evans et al, 2021) and the discomfort caused by osteoarthritis may make geriatric donkeys more prone to weight gain because of a reluctance to exercise. Conversely, the presence of osteoarthritis may make it more difficult for geriatric donkeys to lose weight, as exercise options will be limited compared to those for young or middle-aged donkeys.

DiETING overweight donkeys is difficult and requires veterinary advice (Burden, 2011). It is important to check the overall health status of the animal before beginning a diet plan. This is especially important for geriatric donkeys, who may have several health conditions to consider. A blood sample to check triglycerides (triacylglycerols), insulin and glucose levels should be taken to inform dietary and management changes (Burden, 2011). A dental examination and assessment of the donkey's ability to tolerate exercise should also be made. Donkeys with high triglycerides (>2.8mmol/L) should have an exercise programme initiated before dietary changes are made; once levels fall and are considered satisfactory, dietary changes may be introduced (Burden, 2011).

If the donkey has no specific dental issues, dietary management should focus on straw with very limited grazing in the warmer months (Burden and Bell, 2019). Straw with limited hay and grazing can be given in the colder months. If there are concerns over nutritional deficiency, vitamin and mineral supplements designed for equids can be given in appropriate quantities (Burden and Bell, 2019). Pasture management should be instigated in the form of strip grazing with a guide of fewer than 0.2 acres per donkey of short, cropped pasture (Burden and Bell, 2019). A track system can be introduced to encourage more movement. This involves the use of fencing to create a track of 3–4 metres wide through the donkeys' environment (The Donkey Sanctuary, 2014). The donkeys are free to move and graze only within this track area. Donkeys move much further using the track system, which may be



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**DONKEY BODY CONDITION SCORE CHART**

Accurate Body condition scoring is a hands-on process for feeling the amount of muscle and fat that are covering the donkey's bones. Using this chart as a guide, feel the coverage over the bones in five specific areas listed below. Fat deposits may be unevenly distributed especially over the neck and hindquarters. Some resistant fat deposits may be retained in the event of weight loss or may calcify (harden). Careful assessment of all areas should be made and combined, to give an overall score. When deciding on the correct course of action following condition scoring, you might have to take into consideration the age of the donkey and any veterinary conditions they have. Aged donkeys can be hard to condition score due to lack of muscle bulk and tone giving thin appearance dorsally with dropped belly ventrally, while overall condition may be reasonable. If in doubt, get advice from your vet.

Condition score	Neck and shoulders	Withers	Ribs and belly	Back and loins	Hindquarters
<b>1. Poor (very thin)</b> 	Neck thin, all bones easily felt. Neck meets shoulder abruptly, shoulder bones felt easily, angular.	Dorsal spine and withers prominent and easily felt.	Ribs can be seen from a distance and felt with ease. Belly tucked up.	Backbone prominent, can feel dorsal and transverse processes easily.	Hip bones visible and felt easily (dock and pin bones). Little muscle cover. May be cavity under tail.
<b>2. Moderate (underweight)</b> 	Some muscle development overlying bones. Slight step where neck meets shoulders.	Some cover over dorsal withers, spinous processes felt but not prominent.	Ribs not visible but can be felt with ease.	Dorsal and transverse processes felt with light pressure. Poor muscle development either side of midline.	Poor muscle cover on hindquarters, hip bones felt with ease.
<b>3. Ideal</b> 	Good muscle development, bones felt under light cover of muscle/fat. Neck flows smoothly into shoulder, which is rounded.	Good cover of muscle/ fat over dorsal spinous processes, withers flow smoothly into back.	Ribs just covered by light layer of fat/muscle, ribs can be felt with light pressure. Belly firm with good muscle tone and flattish outline.	Can feel individual spinous or transverse processes with pressure. Muscle development either side of midline is good.	Good muscle cover over hindquarters, hip bones rounded in appearance, can be felt with light pressure.
<b>4. Overweight (fat)</b> 	Neck thick, crest hard, shoulder covered in even fat layer.	Withers broad, bones felt with pressure.	Ribs dorsally only felt with firm pressure, ventral ribs may be felt more easily. Belly over developed.	Can only feel dorsal and transverse processes with firm pressure. May have slight crease along midline.	Hindquarters rounded, bones felt only with pressure. Fat deposits evenly placed.
<b>5. Obese (very fat)</b> 	Neck thick, crest bulging with fat and may fall to one side. Shoulder rounded and bulging with fat.	Withers broad, bones felt with firm pressure.	Large, often uneven fat deposits covering dorsal and possibly ventral aspect of ribs. Ribs not palpable dorsally. Belly pendulous in depth and width.	Back broad, difficult to feel individual spinous or transverse processes. More prominent crease along mid line fat pads on either side. Crease along midline bulging fat either side.	Cannot feel hip bones, fat may overhang either side of tail head, fat often uneven and bulging.

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Figure 2. Body condition score chart from The Donkey Sanctuary (2013b).

beneficial to geriatric donkeys who are prone to stiffness because of mild osteoarthritis. Conversely, a track system may not be appropriate for a geriatric donkey with severe osteoarthritis as they may find that level of movement uncomfortable.

Progress when dieting donkeys may be slow and perseverance is essential for a favourable outcome. A reasonable aim would be to lose 2–3% of body weight monthly (Burden and Bell, 2019). Rapid weight loss should be avoided, owing to the risk of developing hyperlipaemia.

**Feeding the underweight geriatric donkey**

If a geriatric donkey is deemed to be underweight, a full health check should be carried out to try to identify the cause (Burden, 2011). The health check should include evaluation of demeanour and behaviour, a body condition score, appetite, skin condition, temperature, pulse and respiration. For older donkeys, a dental examination is especially important as dental disease is a common cause of weight loss in geriatric donkeys (Burden and Bell, 2019). Mobility assessment would also be important in geriatric donkeys as this may help to identify issues such as osteoarthritis.

Supplemental forage such as hay and haylage can be added into the diet to encourage weight gain (Burden et al, 2013). If extra feed

is required, high energy alfalfa-based chaff products can be used to supplement part of the fibre ration. These products are usually short chopped and are only suitable for geriatric donkeys with good liver function and good teeth. Vegetable oil-based products can also be used to increase the energy content of the diet (The Donkey Sanctuary, 2014). It is important to avoid feeding cereal-based coarse mixes to geriatric donkeys as they do not require the high starch levels provided by such feeds.

**Feeding the geriatric donkey with dental disease**

Dental disease is common in donkeys, particularly geriatrics, and often leads to an inability to chew long fibres forages, causing gradual weight loss with associated lethargy and depression (Burden and Bell, 2019). Dental disease is common with advancing age, therefore geriatric donkeys with dental disease may require a specific diet to help them to maintain a healthy weight and body condition score (Burden et al, 2013). If the donkey is still able to eat long-stem fibre such as straw and hay, the ration can be supplemented with high-fibre nuts and non-molassed sugar beet, if required (Burden et al, 2013). The sugar beet serves to make the meal more palatable and adds fibre to the diet. The total meal size



Figure 3. An obese donkey with a condition score of 5.

### KEY POINTS

- Some geriatric donkeys may require specialist feeding, especially if they also have dental disease.
- Weight should be monitored in geriatric donkeys to identify significant losses and gains.
- Using a weighbridge, a weigh tape, a weight estimator chart or carrying out body condition scoring are all methods that can be used to monitor weight in geriatric donkeys.
- Feeding should be assessed also and special diets may be required.

should be no more than 1kg and should be split down into smaller feeds if possible (Burden et al, 2013). If the dental disease has progressed to the point where the donkey is struggling to masticate long fibres, high-fibre, low-calorie short chop chaff products can be fed ad libitum as part of a 'long fibre forage replacer'. This helps to satisfy the behavioural need of the donkey, as a trickle feeder, to chew for long periods of time (Evans et al, 2021). Feeding short chop chaff products also helps to ensure an adequate intake of fibre. Suitable products should be straw based and have a digestible energy level of 4Mj per kg of dry matter and a non-structural carbohydrate level of less than 10%. Dental disease can cause inappetence, which in turn can lead to hyperlipaemia. Carrots, bananas and apples can be used to tempt an inappetent donkey to eat. However, donkeys with poor teeth may struggle to chew them. In this case, carrots and apples can be grated and added to the feed. If this is not practical mashed, tinned carrots or small amounts of apple sauce could be used (The Donkey Sanctuary, 2014).

### Conclusions

Assessing and managing weight in geriatric donkeys is essential to maintain their health and prevent or help to manage associated conditions. As a result of assessing weight, the diet may need to be



Figure 4. An overweight donkey with a condition score of 4.

changed as a result of either obesity or significant weight loss. A full health check should be carried out before changing the diet of any geriatric donkey. A dental check should be conducted as a part of the full health check to help to assess the donkey's ability to prehend and chew forage. If an exercise program is required, the mobility of the geriatric donkey should be assessed, as age-related conditions such as osteoarthritis will need to be considered as part of a holistic treatment programme. Weighing, weight estimation or body condition scoring should be carried out regularly, and the owner should receive support from a vet or registered veterinary nurse to maintain compliance and achieve the best outcome for the donkey. [EQ](#)

### Conflicts of interest

The author declares that there are no conflicts of interest.

### References

- Barrio E, Rickards KJ, Thiemann AK. Clinical Evaluation and Preventative Care in Donkeys. In: Divers TJ, Toribio RE (eds.) Diseases of Donkeys and Mules. Elsevier: Pennsylvania, 2019: 474–475.
- Burden F. Practical feeding and condition scoring for donkeys and mules. *Equine Vet Educ.* 2012;24(11):589–596. <https://doi.org/10.1111/j.2042-3292.2011.00314.x>
- Burden F, Toit N, Thiemann A. Nutrition and dental care of donkeys. *In Pract.* 2013;35(7):405–410. <https://doi.org/10.1136/inp.f4367>
- Burden FA, Bell N. Donkey Nutrition and Malnutrition. In: Divers TJ, Toribio RE (eds.) Diseases of Donkeys and Mules. Elsevier: Pennsylvania, 2019: 474–475.
- Evans L, Crane M, Preston E. The Clinical Companion of the Donkey (2nd edn). Matador: Leicestershire (UK), 2021.
- Gerrard E. Owner compliance—Educating clients to act on pet care advice. *Vet Times (Peterb).* 2015;15(4):5–7.
- Morrow LD, Smith KC, Piercy RJ et al. Retrospective analysis of post-mortem findings in 1,444 aged donkeys. *J Comp Pathol.* 2011;144(2-3):145–156. <https://doi.org/10.1016/j.jcpa.2010.08.005>
- The Donkey Sanctuary. Condition scoring and weight estimation of the donkey. 2013a. <https://www.thedonkeysanctuary.org.uk/sites/uk/files/2018-12/condition-scoring-and-weight-estimation-of-the-donkey-20181211.pdf> (accessed 28 April 2022)
- The Donkey Sanctuary. Donkey body condition score chart. 2013b. <https://www.thedonkeysanctuary.org.uk/sites/uk/files/2018-10/body-scoring-chart.pdf> (accessed 28 April 2022)
- The Donkey Sanctuary. Feeding the elderly donkey. 2014. <https://www.thedonkeysanctuary.org.uk/sites/uk/files/2017-08/feeding-the-elderly-donkey.pdf> (Accessed 7 April 2022)