

Brought to you by...



equinedentalvets.com.au
committed to advancing horse health

by Jennifer Stewart BSc BVSc, PhD

Body Condition

Obesity is becoming a major health concern in horses (and people) all around the world, and is increasingly recognised as an equine welfare issue because it compromises both health and performance, but can you recognise if your horse is too fat or, for that matter, too thin?

In this article, Dr Jennifer Stewart, an equine veterinarian and researcher who specialises in equine nutrition, discusses in detail the importance of keeping horses in a healthy condition, how the body condition scoring system is used to assess the state of each animal, and the steps you can take to successfully control the weight of your horse or pony.

Watch the video at:
www.equinedentalvets.com



The truth about fat

In most instances, horses become overweight because they are given the opportunity to consume more calories than they need. Certain breeds/types are more prone to weight gain and require even more careful management to try to prevent this energy imbalance from occurring.

Horses (and ponies), like humans and other animals, will eat to meet their energy requirements. But, if the feed is palatable and high in energy-density, some horses - like individuals of all species - will eat more than is needed. Energy in excess of requirements is stored as fat (ah and don't we know it!). And, fat is not an inert tissue.

Previously thought to be simply a way for the body to store fat, adipose tissue (the medical name for 'fat') is in fact, a dynamic organ that produces hormones and chemicals.

Fat secretes many nasties with such horrifying names as *tumour necrosis factor*, cytokines and *interleukins* - all of which increase inflammation in the body. Fat cells also summon white blood cells to the fat tissue, further increasing production of inflammatory chemicals and compounds. Normally, these hormones and chemicals are activated in response to invading bacteria and infections. In obesity, however, they cause disease.

Overweight horses are more prone to colic, laminitis, foaling and hormonal problems, tire more easily, are less agile, and have reduced reproductive ability.

Equine Dental Vets an organisation committed to advancing horse health

Our group is made up of Equine Dental veterinarians from across the globe and we have over 300 members right here in Australia. Most of our members provide afterhours and emergency care for all equine health issues and using our dedicated search on our website you can find the Equine dental vets nearest you at the touch of a button. This is particularly useful if you are away from home, for example when travelling to shows and competitions.

We are proud to provide you this healthcare information in partnership with Horses and People magazine.

www.equinedentalvets.com.au



The Body Conditioning Scoring (BCS) scale was developed in the 1980s by Don Henneke, PhD to evaluate the condition of broodmares. The scale goes from 1 to 9 where 1 is emaciated and 9 is obese.

Although there are variations depending on age, activity level and type, which will be discussed later in the article, a BCS of 5 in the Henneke scale is considered ideal for a horse that is receiving moderate exercise.

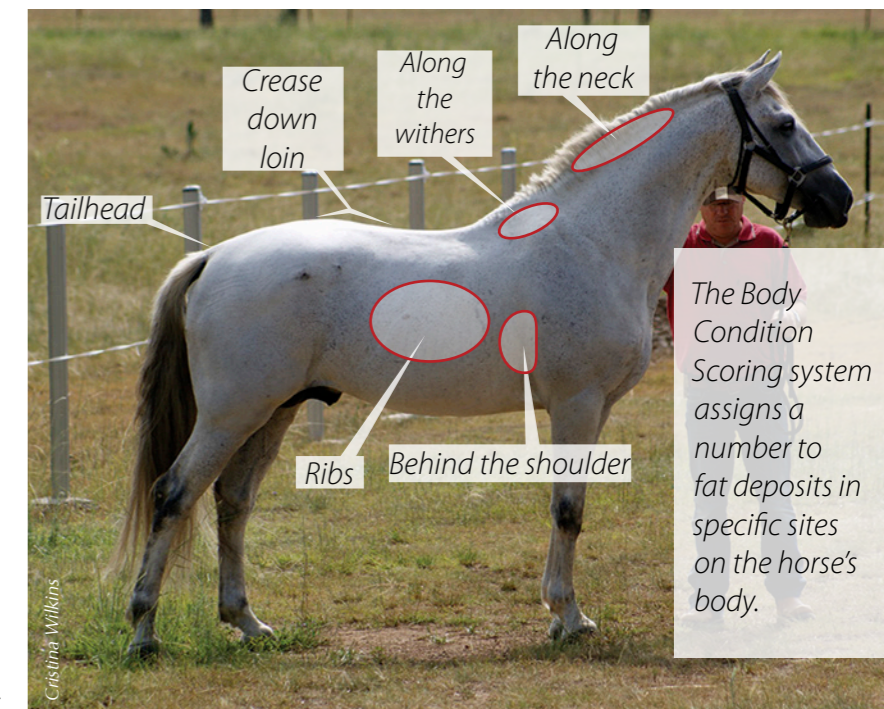
Mares with a body condition score (BCS) of 7 or above 7 ovulate less frequently, reducing their ability to get in foal. Carrying excess weight also increases joint, tendon and ligament strain, cancer, skin, heart and circulatory difficulties, risk of strangulating lipoma (where accumulations of fat inside the body twist and cause colic) and decreases resistance to diseases - all of which reduce life-expectancy and quality.

In people, obesity is related to high blood pressure, increased risk of cancer, circulatory problems, stroke and diabetes to name just a few.

Although figures are not available for horses, in people, mortality at any age is 9%, 25%, 65%, 230% and 1200% greater for people who are 15%, 25%, 40%, 55% or 100% overweight. Whether obesity causes these effects in horses is unknown - but it probably does.

One of the few benefits of excess body fat is the improved ability of fat horses to keep warm in cold climates. Due to the insulating properties of body fat, as well as its availability as an energy source, horses of BCS 7-9 require less supplemental feed during cold weather than do horses of lower BCS. This, however, also causes increased heat stress in hot weather. Horses of BCS 7.5 have difficulty dissipating heat in a hot and humid environment (31.5°C, humidity 43.8%), compared to horses with of BCS 5.2.

Optimum body condition depends on the age, breed, work level and reproductive status of the individual horse, and is affected by weather, parasites, dental problems and hormone status.



The Body Condition Scoring system assigns a number to fat deposits in specific sites on the horse's body.

continues next page...

Sites to check when condition scoring



ABOVE: Palpating for fat deposit along the crest and wither



ABOVE: Behind the shoulder



ABOVE: Trying to feel the ribs



ABOVE: Crease along the back



ABOVE: The tailhead

There are also negative relationships between body fat, athletic performance and soundness. Horses of BCS 7.5 have higher heart rates and longer recovery times after exercise, than horses with BCS 5.2. Fatter horses have higher respiration rates following a 30-minute workout of walk, trot and canter in an indoor arena. In overweight children, a reduction in body weight of just 5% increased exercise ability by almost 35%. A BCS of 4.5-5 is most consistently recommended for horses engaged in moderate to intense exercise.

The laminitis connection

From a veterinary perspective, there are only two types of pony in the world: ponies that have foundered and ponies that are going to founder!

Ponies evolved in the cold areas of northern Europe and England, surviving extremes of cold and a scarcity of feed. They evolved by adjusting their glucose metabolism, and developing a hearty appetite and the ability to shunt blood away from their feet. One of the hormones released by fat cells, is leptin. Its normal role is to shut down appetite. Obese horses and ponies are often resistant to leptin and continue to be hungry and eat - even though leptin is pumped out at higher and higher levels. Today, these traits increase risk of laminitis, making it important to prevent excess condition in winter as risk of laminitis (founder) is higher when spring pastures come through. The predecessors of Arabian and Thoroughbred horses evolved in North Africa, adapting to hot, dry conditions with thinner skin, less fat and little tolerance of winter conditions. So, generally, it is easier for ponies to maintain body condition than it is for horses, especially in winter.

The link between obesity and laminitis has long been recognised and recent research has found that ponies of BCS 7.8-8.4 have a reduced ability to use glucose, which is instead stored as fat - and this progressively worsens. The reduced ability to use glucose (also known as 'insulin resistance') is equivalent to diabetes in humans. Laminitis and founder are, in fact, the equine equivalent of diabetes - insulin resistance leading to restricted blood flow, blood clots, glucose starving and the degeneration and breakdown of the laminae in the hooves.

Summary of the Henneke Body Condition Scoring, which uses a 9-point scale

BCS*	NECK	WITHERS	SHOULDER	RIBS	LOIN	TAILHEAD
1 Emaciated	boney	boney	boney	protruding	boney	protruding
2 Very thin	faint bones	boney	boney	prominent	slight cover	prominent
3 Thin	accentuated	accentuated	accentuated	slight cover	light cover	less prominent
4 Moderately thin	neck not too thin	not too thin	not too thin	faint outline	peaked	some fat
5 Moderate (ideal weight)	smooth	rounded	smooth	not visible	level back	soft fat
6 Moderately fleshy	some fat	some fat	some fat	spongy	slight groove	soft fat
7 Fleshy	fat along neck	fat deposits	fat behind	fat filling between & over	crease	soft and round
8 Fat	thick neck	fat along withers	fat behind, smooth	can't be felt	crease	very soft
9 Extremely fat	bulging fat	bulging fat	bulging fat	fat patches over ribs	deep crease	bulging fat

ABOVE: A summary of the Henneke scores. *Adapted from Henneke, Potter and Kreider (1981)

The Australian BCS system, developed by the Victorian Department of Agriculture, using a scale of 0-5

BCS*	NECK	WITHERS	BACK AND LOIN	RIBS	RUMP
0 Very Thin	boney, no shelf with shoulder	boney	3 points of vertebrae felt	easily seen	tail bone & hips project
1 Thin	boney, slight shelf	can feel bones	1 point of vertebrae felt	just visible	can feel hip bones
2 Fair	some fat over bones	some fat	some fat over vertebrae	invisible can be felt	fat over hips
3 Good	neck blends with shoulder	rounded	level	layer of fat	can't feel hips
4 Fat	fat deposits along neck	fat pads	crease	smooth spongy fat	can't feel hips
5 Very Fat	bulging fat	bulging fat	deep crease	pockets of fat	pockets of fat

Obese horses with high body condition have high blood glucose, overproduction of insulin and abnormal thyroid levels - a hormonal profile similar to that of a type II diabetic human. In horses, body condition scores above 6 in the Henneke scale are a risk factor for metabolic syndrome/insulin resistance and laminitis.

The eye of the Master maketh the horse fat!

Many horse owners seem to be unaware of the serious consequences of equine obesity. Horses become overweight or obese for many reasons, including overfeeding with grain-based concentrates, unrestricted access to pasture and/or a lack of exercise. Sometimes Cushing's Disease and hypothyroidism may be underlying causes. The most common cause of weight gain is too much food and not enough work. Feral horses don't get fat and most domestic horses regulate their food intake to maintain a BCS of 5-5.5 on free choice grass hay, even if not being exercised. Pasture, however, can be a different story - 30-40% will get overweight due to high grass sugar levels.

Because 'beauty is in the eye of the beholder', beauty in one owner's eye equals fat in another's. And, of course, optimum body condition depends on the age, breed, work level and reproductive status of the individual horse. Body condition is also affected by weather, parasites, dental problems and hormone status. So, how do we determine the amount of body fat and what is optimum for individual horses? Our ability to assess body condition is affected by pregnancy, coat, and hay or grass bellies.

Fast Fact!

When asked to estimate a horse's weight, 85% of veterinarians and horse owners underestimated by 70-90kg - and there was no relationship between number of years' experience with horses and accuracy of the guess!

It seems like just about everyone thinks horses and ponies are supposed to be fat. Owners in England had a poor ability to assess body condition accurately, and owners with obese horses had a tendency to underestimate their horse's condition. When asked to group horses as very underweight, underweight, correct weight, overweight or very overweight in a recent study in England, there was poor agreement between the owners' perception of whether their horses were obese or not and the body condition score.

A recent study of 200 horses in the United States found six were under condition (BCS<4), 141 optimal condition (BCS 4-6), 96 over condition (BCS 6.5-7) and 57 obese (BCS 7.5-9). And, in Scotland, a recent survey of pleasure horses found 45% were obese.

continues next page...



Dr Kim Johnson
Equine Dental Vet
BVSc
Traveller
Speaks multiple languages



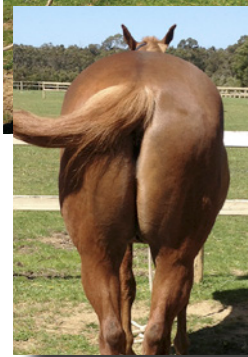
Real people who really care about horses

Scan this code for more



We are Equine Dental Vets





A 9 year old Quarter Horse Gelding. Although this horse is clearly overweight, BCS scoring requires a 'hands-on' approach and is difficult to assess accurately from a photo.

It seems owners everywhere are becoming increasingly accustomed to seeing overweight horses and may consider this to be the acceptable norm.

Body Condition Scoring and weight estimation

Assessing 'fatness' is aided by the use of one of four systems: the body condition scoring (BCS) system, measuring girth and length, weight tapes or measuring only girth.

To establish a relationship between body condition and body weight, in the 1980's Dr Henneke developed a system of body condition scoring.

The BCS was originally developed to assess the fatness of pregnant Quarterhorse mares. It had been noted that as horses gain weight, fat is laid down in a predictable pattern and the location of stored fat is a big clue as to how much excess fat the horse has. First, horses will protect major organs with fat, then fat is laid down behind the shoulder, then over the ribs, on the rump, along the back, and finally on the head and neck. The BCS system is based on visual appraisal and palpable fat cover at six areas of the horse's body.

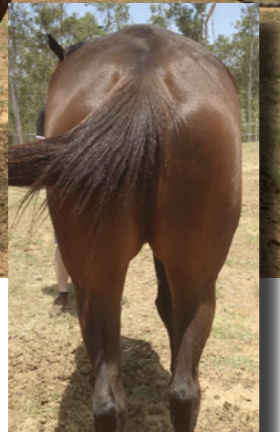
The Henneke system assigns a number to fat deposits in specific sites on the horse's body - the neck, withers, shoulder, ribs, loin and tailhead. (See images and table on page 14).

The neck allows for refining of the BCS. As horses gain condition, fat is firstly deposited along the top of the neck, followed by all the way round, then the crest and throatlatch. The shoulder also helps refine the BCS, especially if conformation factors have made other areas less helpful. As horses gain weight, fat is deposited around the shoulder, so it blends smoothly with the body. As condition increases, fat is deposited behind the shoulder, especially in the region behind the elbow. The back and the rump both have a generous layer of fat on top of the muscle. Rump fat changes quicker than rib fat in weight gain and weight loss. Increasing fat depth at the rump or tailhead is correlated with an increasing body condition score - a one unit change in BCS corresponds to a 0.5cm alteration in rump fat thickness.

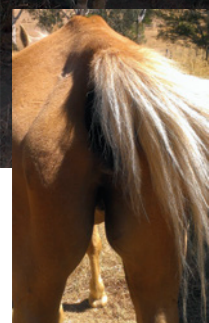
One-size does not fit all

Some conformation differences make it difficult to apply the BCS to specific animals. In mares with more prominent withers and flatter across the back, more emphasis is placed on fat cover over the ribs, behind the shoulder and around the tailhead. Conformation changes also occur in pregnant mares as the weight of the growing foal stretches the skin and musculature of the back, ribs and tailhead, and fat cover diminishes in these areas. To compensate for this, more emphasis is placed on fat deposition behind the shoulder and along the withers. Maiden mares have more fat cover over their ribs than older mares of the same body condition and so fat cover over the ribs is not used extensively when evaluating maiden mares.

Henneke noted that each horse has its own ideal condition for their breed and occupation: for the broodmare it is BCS 5-7, the stallion 5-6 and the performance horse 4-6. In very athletic and highly-conditioned horses, a BCS of 4.5 can be normal.



A 5 year-old warmblood filly that looks to be in good condition. It is especially important to prevent young horses from carrying too much weight on their growing joints.



A 30 year old Palomino Gelding that has lost a lot of condition. Preventative healthcare is paramount when caring for aged horses. If the horse is emaciated, a veterinary examination and dental check-up are essential.



Fat is laid down in a predictable pattern and the location of stored fat is a big clue as to how much excess fat the horse has.

There is also a significant difference in body condition scores in horses of different disciplines. Show horses are fatter than dressage horses, who are fatter than showjumpers. This may reflect what is considered ideal body condition scores for show horses.

We can all tell, without a need for close examination, when a horse is too thin. The focus of this article is on the overweight horse. As a horse gets fatter, an obvious depression forms down the back due to fat accumulation along the spinous processes. Once the horse progresses to obesity, feeling the ribs will be impossible and fat is stored around the tailhead, which will feel soft and begin to bulge.

It is important to note that the prominence or sharpness of the withers varies between breeds: a Thoroughbred typically has more prominent withers than a Quarterhorse. Retired Thoroughbreds can be significantly heavier than their racing counterparts, but have the same height and condition score. Notwithstanding these breed differences, in obese horses, the withers will be bulging with fat.



Cristina Wilkins

ABOVE: Whith mares, conformation changes as the pregnancy advances make it difficult to apply the BCS. To compensate for this, more emphasis is placed on fat deposition behind the shoulder and along the withers.

BCS is also affected by diet and season

In Thoroughbred geldings, fewer body areas can be used to accurately predict BCS. You only need to assess the neck, shoulders, ribs, and tailhead - wither and loin fat are less reliable indicators of percentage body fat, indicating that Thoroughbreds store fat on the neck before the loin, shoulder, ribs, tailhead and withers. Horses store more fat on the neck and withers when they are on high-fat/high-fibre diets than when they are fed high-starch/high-sugar diets - and the neck score is often higher than the withers and loin through autumn and winter. The loin area of Thoroughbreds and Quarterhorses is affected by the level of exercise, which changes the musculature of the back and the appearance of the back as the muscles build. Loin area is also a poor guide in mares fed for weight gain and shows little change, even as they gain condition from BCS of 6 to 9.

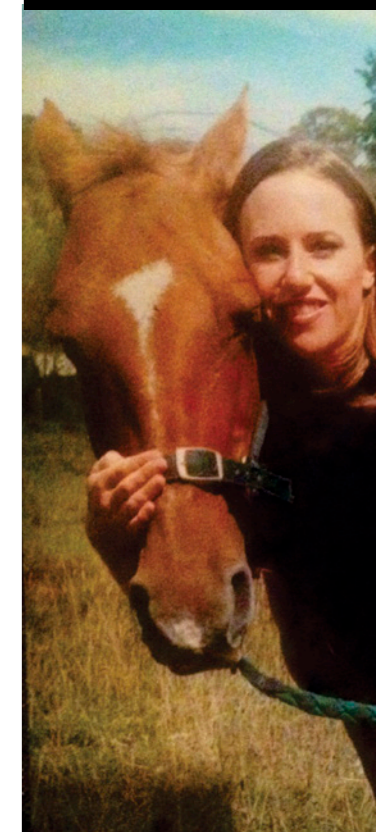
In addition to the traditionally-evaluated areas of fat, it also helps to look at bone size. Light-boned horses tend to carry less fat and have longer, leaner muscles. They will look leaner overall than a horse with big bones and bulky muscles, and they will weigh less as well. Using the Australian body condition scoring system of 1-5, the ideal score for endurance horses is 1.5-2.5, for polo ponies 2-2.5, equestrian horses 3-4, broodmares 2.5-4 and show horses 4.

An Australian study showed a positive relationship between girth and weight, and between length and weight, allowing estimation of body weight from these measures. Charts have been developed that use BCS and wither height. The table on Page 18 shows the body weight estimates for horses of different heights.

continues next page...



Dr Kim Johnson
Equine Dental Vet
BVSc
Horse lover



www.equinedentalvets.com

Real vets who really care about horses



106 Liverpool St, Scone NSW 2337
Ph 02 6545 1333
Email: info@sconequine.com.au
www.sconequinehospital.com.au

We are Equine Dental Vets
EQUINE DENTAL VETS
www.equinedentalvets.com

Study shows that BCS systems may not be accurate with ponies

Recent research presented at the British Equine Veterinary Association Congress (2009) shows that current body condition scoring systems may not be accurate for monitoring weight loss in ponies.

The researchers recorded body condition score, girth measurements, and measured the depth of fat over the rump and ribs using ultrasound. They also estimated the body fat content at the beginning and end of a weight loss study.

Although an appropriate and safe rate of weight loss was achieved, and girth and fat measurements decreased over time, the body condition scores remained constant. This indicates that body condition scoring is not the most effective way to monitor early weight loss in ponies.

The research group is developing a new condition scoring system designed specifically for ponies that will establish the relationship between actual measurements of body fatness and the external appearance of the pony.



BCS may not be the best way to assess weight loss in ponies.

We will bring the results to you as soon as they become available, but in the meantime, the existing systems are worth using to assist in achieving and maintaining a body condition that protects health.

Different systems for predicting weight

Weight tapes: These are available in most saddlery and feed shops. Measurements should be taken with the tape snugly around the girth at the end of respiratory expiration. Weight tapes, however, are unreliable for foals, miniatures and high-withered horses.

Measuring girth: When a weight tape is not available, an ordinary tape measure can be used with the table on the opposite page, from 'Feeding and Care of the Horse' by Lon Lewis.

Measuring girth and length: Another method, which is reasonably accurate, uses length (from the point of the shoulder to the point of the buttock) and girth (taken immediately behind the elbow).

Weight loss and the skinny horse

Dr Shannon Lee BVSc, MANZCVSc, EqD, EDs, MICEVO

When it comes to weight loss there are many possible causes, so, first and foremost it is important to keep up-to-date with treatments such as worming, dental care, vaccination etc. The best protection you can offer yourself and your horse is good preventative health care.

Owners often wait until they either notice a change or purchase a new horse that is looking poor, expecting it will gain weight in their hands and discover that it does not. If you do this don't expect a quick fix when you ring the vet, it won't often be possible.

A long term battle with parasites for example, can cause permanent changes to the horses gut.

Serious dental issues such as periodontal disease, overgrown and missing teeth, or fractured teeth have serious effects and require committed and long-term treatment or management.

As an owner, you are responsible for providing best care for your horse.

Weight loss in horses can also be the result of heart disease or metabolic issues, so a quick call to the vet for a wormer and a dental without a medical work up to identify these issues isn't going to fix much and will leave you out of pocket with a horse that is still skinny.

With older horses that have lost condition, it is even more important to identify the problems and consider how serious each one is, both for the long-term health of the horse and as a tool to make decisions about treatment.

Older horses can often be afflicted by several problems all happening at the same time, with each having a compounding effect on weight. An older horse, for example, may be cushingoid, have chronic scarring and changes to the bowel, have a worm burden, face serious dental issues as a result of a lack of or inadequate treatment and could also have cardiac problems. Untreated dental disease and bowel issues may also mean the horse lacks the ability to chew and absorb roughage or fibre.

The really tricky part is that many horses will show no outward signs of any health problem for a very long time (years or decades) so, if your only guide to determining who receives treatment is their outward appearance, you will find that by the time you call the vet, the news are almost inevitably going to be very bad and expensive to treat.

The simple message is this: DON'T leave it too late. Seek regular veterinary advice and book regular dental examinations and health checks with your Equine Dental Vet.

To find an Equine Dental Vet in your area visit: www.equinedentalvets.com



Henneke noted that each horse has its own ideal condition for their breed and occupation: for the broodmare it is BCS 5-7, the stallion 5-6 and the performance horse 4-6. In very athletic and highly-conditioned horses, a BCS of 4.5 can be normal.

Body composition studies have shown that body fat percentages range from 5.1-19.9% in thin condition horses, 7.4-11% in moderately thin horses (BCS 4-4.9), 12-24% in moderate to fleshy horses (BCS 5-6.9) and 16.4-31.3% in fleshy to obese horses (BCS 7-9). Mature mares, especially broodmares, have higher body fat percentages (12-16%) than the other sexes and to younger mares (8-11%). So horses with X BCS can have over 20% more fat, which means more inflammatory chemicals and greater risk of metabolic derangement.

BCS systems, which measure fat, may not be very accurate for assessing weight loss in ponies. They provide no information on muscle mass or tone, cardiovascular fitness or athletic conditioning, and do not tell you how fit your horse is for performance.

continues next page...

Predicting weight by measuring girth

Girth (cm)	Weight (kg)
76	45.4
102	91
116	136.5
128	182
140	227
148	273
156	318
164	364
171	409
178	455
185	500
192	545
197	591

Formula for estimating weight:

Adult horses: $\frac{(\text{girth} \times \text{girth}) \times \text{length}}{11900} = \text{body weight (kg)}$

Foals (0-60days old): $\frac{(\text{girth} - 25)}{0.07} = \text{body weight (kg)}$

Let us do the maths for you!



www.horsesandpeople.com.au
Horse Weight Calculator

On the Horses and People website you can find the **Horse Weight Calculator**, which uses the most reliable Huntington formula for calculating your horse's weight measuring girth and length.

Just slide the toggles to your horse's measurements and the system will work out the kilograms for you.

Find it at: <http://www.horsesandpeople.com.au/horse-weight-calculator>



Australian Showjumping team triumphs over New Zealand

The 2013 Australian Showjumping Championships was a great success with Werribee providing a world class venue. The competition was held over 4 days involving 450 riders and 600 horses.

A highlight of the event was the Australia vs New Zealand Oceania Challenge with four riders from each country competing over two rounds.

Shane Davidson, Coprice sponsored rider from Toowoomba, was honoured as a first time selection into the Australian showjumping team. The Australian team comprises Tom McDermott, Jamie Kermond, Sharon Slater and Shane Davidson.

The team was overseen by Olympic legend Vicki Roycroft as Chef d'Equipe. The team was successful in winning the Oceania Challenge and look forward to building a solid platform leading into selection for the Rio games.



Shane Davidson, Fairbanks LuLu & Vicki Roycroft



CopRice has a range of formulations including pelleted and extruded horse feed to suit your needs. Contact CopRice on 1800 029 901 or visit www.coprice.com.au for more information.



Cristina Wilkins

Diets for weight loss should never include starvation - not even for eight hours. Always provide roughage.

A system to assess muscle development has been developed by Progressive Nutrition. Called Muscle Development Score (MDS), it rates the muscle mass over the back, loin, croup, hindquarters and stifles.

For more information, go to: http://www.prognutrition.com/PDF_Files/BCS%20and%20MDS%20'06a%20-%20written%20out.pdf.

Weight control

Gaining weight just requires an increase in calories, whereas losing weight requires a reduction in calories - a simple enough principle. Restricting feed intake, however, results in loss of fat and muscle. So, whether we want to gain muscle or lose fat, the glycaemic index and the amino acid composition of the diet are important. By reducing calorie (carbohydrate) intake - such as grains, pollard, rice-bran etc. - and fine-tuning protein intake - such as soybean meal, cottonseed meal, lucerne etc. - we can reduce fat without losing muscle mass.

Reduction in the BCS of overweight horses is beneficial to their long-term health, performance, and wellbeing.

Prediction of weight using height and body condition score

BCS*	12 hands high	13 hands high	14 hands high	15 hands high	16 hands high
1	190kg	240kg	310kg	390kg	420kg
2	210kg	285kg	330kg	420kg	470kg
3	250kg	345kg	395kg	460kg	505kg
4	300kg	370kg	460kg	535kg	570kg
5	360kg	460kg	540kg	610kg	670kg

Weight loss through feed restriction and/or exercise improves insulin sensitivity, reducing the chance of reproductive problems and laminitis, and improving exercise tolerance. The key to managing equine obesity is to monitor body weight and/or BCS. Although successful weight loss can be difficult to achieve and/or maintain, the simplest method is to reduce calorie intake.

Feeding 65-70% of the energy required for their ideal body weight will facilitate weight loss, and should result in a reduction in BCS of one score per month.

Low- to medium-quality grass hay, plus a mixture of vitamins and minerals to balance the low copper, zinc, salt, selenium, vitamin E, and vitamin A concentrations commonly found in mature forages, is a good, sound approach.

Horses on pasture can be fitted with grazing muzzles or just turned out from early to mid-morning when pasture sugar levels are lowest. Voluntary exercise can be encouraged by increasing paddock size and providing paddock mates.

Riding 3-4 times a week for 30 minutes is also beneficial, but take care when exercising overweight horses because they can have trouble breathing and overheat easily - keep it slow and gentle, with rests if respiration becomes rapid. Also keep an eye on joints, tendons and ligaments.

Diets for weight loss should never include starvation - not even for eight hours - always provide roughage. Ponies are at risk for a usually fatal condition called hyperlipaemia, which is triggered by the withholding of feed. Always maintain roughage intake above 1% of bodyweight. In overweight ponies, grassy meadow hays are an answer. They are high in fibre, they take a long time to chew, so the pony happily thinks it has eaten a lot and its gut does too, but calorie and protein intake have not been excessive. Hay made from sugar-rich grass can have high levels of sugar. These can be removed by soaking the biscuit for 16 hours. But don't discard the water into dams or creeks because it has an oxygen demand many times that of sewerage and it will pollute the water.

Because horses have a great psychological need to chew, dieting can lead to an increase in weaving, wood-chewing, crib biting and bedding eating. Letting them have social contact, providing 'toys' and regular exercise will reduce the risk.

Allowing body condition to fall below a score of 1.5 is likely to compromise a horse's welfare. During winter, a long, heavy hair coat can obscure body condition and you may need to run your hands over the horse to get an accurate score.

Adding condition

Poor body condition is not always due to lack of feed, but could be related to parasites, dental problems, chronic injury or illness, or lack of mobility due to arthritis or lameness affecting the horse's ability to graze. (See Dr Shannon Lee's article on page 16). For most horses with low bodyweight, however, the most common cause is not feeding enough calories.

The first step should always be to estimate the horse's weight, score his or her body condition and do a calorie count. If the horse is emaciated, a veterinary examination and dental check-up are recommended.

When you calculate the amount of feed your horse requires each day, a good rule of thumb is to feed 1.5 - 2.5% of their body weight in feed. To increase weight it may be necessary to feed up to 3% of bodyweight.

To avoid digestive disturbances and laminitis, weight gain should be managed gradually and with correct dietary management. An increase in condition on a healthy, but thin horse, can be easily achieved by feeding a balanced diet with adequate amounts of a nutrient-dense, highly digestible feed.

The table on left shows the amount of energy, over and above maintenance requirements, needed to increase the condition score from 4 to 5 over different periods of time.

Estimated energy needed to increase condition score from 4 to 5

TIME TO ACHIEVE GAIN	DAILY ENERGY ABOVE MAINTENANCE NEEDS (MJ)
2 Months	22-28
3 Months	15-19
4 Months	12-13.5
5 Months	8.8-11.3
6 Months	7.5-9.2

The wrap-up

So, now you know how to use the body condition scoring system! It is helpful to do it with friends so you can discuss the scoring - and the closer you agree, the more accurate and confident you will become.

Preventing horses from getting too forward in condition is always easier, cheaper, less time-consuming and less painful than trying to induce weight loss. Becoming familiar and well-rehearsed with using the body condition scoring system provides valuable information on how your horse is doing, and whether you need to fine-tune and adjust energy intake to promote optimum health and performance.



This month's contributors to the health feature from **Equine Dental Vets**

Jennifer Stewart BVSc, PhD



Dr Jennifer Stewart was an equine practitioner, veterinarian at the 2000 Sydney Olympics, and NSW Thoroughbred Racing track veterinarian for over 30 years. She has a PhD in foals and speaks at seminars and consults to studs, trainers, riders and owners in Australia, UAE and the Middle East, Japan, New Zealand, Europe, South Africa, Hong Kong, Malaysia, Singapore and Ireland. Her special interests are nutrition, foal growth and development and exercise physiology. For more: www.drjenniferstewart.com

Dr Shannon Lee BVSc MANZCVSc Eq D EDs MICEVO



Dr Shannon Lee is one of Australasia's leading Equine Dental Veterinarians. Based in Sydney Shannon travels the globe, treating cases, teaching and consulting. In his downtime he likes to ride and take time out with his dog Indy. To reach Shannon with your questions visit www.facebook.com/pages/advancedequinedentistry.au