

SECTION NINE

ESTIMATING BODYWEIGHT
AND CONDITION SCORING

Many newer horse owners find it difficult to estimate the bodyweight of their horses to ensure correct feeding rates of concentrate feeds, and dose rates of worming pastes, or other medications. Most of the commercial sweet and custom feeds for working horses are recommended on a bodyweight basis, and underestimation of a horse's weight can lead to oversupply of energy, and related handling and behavioral problems. Often the feed itself is blamed for being "too hot", when it may be due to overfeeding in proportion to bodyweight and exercise level. Monitoring the bodyweight on a regular basis is useful as an early indicator of health problems. Regular weighing of growing horses on larger breeding farms can monitor growth rates, and if necessary, feeding changes can be made to prevent overgrowth and risk of future unsoundness.

Condition scoring is a practical system of monitoring the optimum condition and fat distribution for show, working and breeding horses. It provides a target range of condition in which the animal should be for its well being, health, performance and breeding efficiency. Condition scoring provides a standardized, repeatable method of assessing variation in condition in breeding horses from season to season.

BODYWEIGHT

An accurate estimate of a horse's bodyweight is important when formulating or making adjustments to its ration to meet specific needs. Ideally, feeds should be weighed, and the ration calculated according to a horse's bodyweight, as the total dry matter a horse can consume to meet maintenance, exercise and reproduction needs is proportional to its bodyweight. (See page 171.)

HINT

As a guideline, most horses will consume about 2% of their bodyweight to meet needs for light work. As workload increases, more feed is required, but bulk of the ration may be limited by appetite, type of horse and exercise to between 2.5-3.0% of bodyweight.

Surveys have shown that most horse owners and veterinarians alike, tend to underestimate a horse's bodyweight about 80% of the time. Visual appraisal of bodyweight from the build, type and condition of the horse can be up to 150lb (70kg) underweight. Wider variations occur in horses above 1100lb (500kg) bodyweight, as appraisal of condition and proportion is more difficult. However, with experience, many horse owners can make very accurate appraisals, within $\pm 5\%$.

As most medications, and particularly worming pastes are administered on a bodyweight basis, underdosing can lead to reduced effectiveness, and in the case of wormers risk of resistance build-up against the chemical, or side-resistance to the class of compounds.

HINT

Bodyweight is proportional to girth diameter, height, and length of the body. It is influenced by type, build and breed of the individual horse, and its relative condition. High fiber content in a ration increases gut distension and water retention in the large bowel, acting to increase bodyweight relative to size by up to 3%.

There are several methods that can be used to measure or estimate the bodyweight of a horse.

A. Weighing Scales - 100% Accurate

Horse weighing scales, either in a chute, or as an electronic weight sensitive mat, are becoming more widely used in training stables to monitor the weight of performance horses on a weekly basis. A record of the horse's bodyweight when conditioned and fit for racing or competition, can be kept and related to performance.

HINT

Surveys indicate that racing horses perform more consistently when maintained within ± 20 lb (about 10kg) of their last winning race weight, with weight handicaps taken into account. However, the relative recovery rate, condition and response to training must be taken into consideration when assessing a horse's potential to perform on a repeated basis when the bodyweight is maintained within these limits.

HINT

If scales are not available, haul your horse to the local feed store, or to a weighbridge for trucks.

Avoid weight horses just after feeding or drinking as gut fill can add up to 20lb (about 10kg) onto a horse's average weight.

to the point of the pelvis or buttock just to the side and below the tail.

B. Body Proportions Relative to Girth² and Length -90-95% Accurate

The relative body proportions change with age, condition score, breed and type of horse. Measurement of the chest circumference or heart girth, combined with barrel length, using a mathematical calculation will give a reasonably accurate estimation of bodyweight. This method is accurate enough to calculate bodyweight for a worming dose.

The equations for calculating bodyweight based on heart girth and length are as follows:

Bodyweight (Pounds) =

$$\frac{\text{Heart girth (in)}^2 \times \text{length (in)}}{241}$$

Bodyweight (Kilograms) =

$$\frac{\text{Heart girth (cm)}^2 \times \text{length (cm)}}{8717}$$

HINT

Heart girth - make sure the horse is breathing out when you take the girth measurement. Watch the nostrils or flanks. Take girth circumference just behind the point of the elbow and slope the tape back to immediately behind the withers area. (Height is measured to central area of the withers.)

Length Measurement - Measure from point of shoulder, inclining tape upwards in a straight line

In racing horses, in lean, fit condition, these equations can overestimate bodyweight by up to 45lbs (20kg).

C. Weight Belts or Tapes - 85-90% Accurate

Girth tapes, calibrated with a reading of relative bodyweight for an adult horse in average condition, are available from feed stores or saddleries, and give a practical estimate of bodyweight. Accuracy of measurement is influenced by the elasticity of the tape, position around the chest area, and thickness of hair coat. Taught tapes are not very accurate in heavily pregnant mares, or thin fit race horses due to the variations in fluid, body fat and gut content. Encircle the tape around the girth just behind the wither, and read off the weight when the horse is breathing out. This method is not very accurate as the condition and length of the horse is not taken into account. However, it does give a very good indication of your horse's relative gains and losses if taken on a regular basis. Keep a chart on each horse's bodyweight using the same measuring technique each time at weekly intervals. The feed intake and work load may be adjusted accordingly to maintain a relatively constant bodyweight or desirable degree of condition.

D. Experienced Guesstimates

Some people have the experience and eye for making rough estimates of an individual horse's weight. However, these guesstimates are not reliable where accurate doses of medication are to be administered.

E. Helpful Guidelines to Ages/Breeds

HORSES IN AVERAGE CONDITION (Condition Score 4-5)		
Height (Hands)	BODYWEIGHT	
	Pounds	Kilograms
10-12	550-660	250-300
12-14	660-880	300-400
14-16	880-1100	400-500
16-17	1100-1200	500-550
17-18	1200-1320	550-600

CONDITION SCORING

In the early 1980's, the concept of condition scoring was developed by researchers at Texas A & M University, and this system has been adopted to grade the body condition of horses. This system scores relative condition from very poor and emaciated, to extremely fat in a 9 point score range. Another system was developed in Australia, with a score range of 1-5.

Condition scoring provides an objective assessment of body condition, and includes consideration of the body fat distribution as a standardized method of monitoring optimum condition in all horses. The system is relatively simple and quick to score, and repeatable scores can be made even by horse persons with no previous experience of assessment and scoring methods.

There has been little work to relate optimum body condition required for various classes of horses; hard working horses such as endurance, polo horses and eventers, are usually kept in lower body condition than racehorses, showjumpers and show horses.

Breeding mares should be kept at a condition score of 5 or higher to ensure best fertility and better overall milk production.

An optimum body condition score for various types of horses has been included as a practical guideline in Table 1 below. Adjustments to the ration and exercise program may be necessary to maintain condition within an optimum score range.

Body condition scores are also helpful to monitor the degree of obesity in ponies and horses that are likely to founder.

The warning signs of likely laminitis or founder on spring pastures in ponies include enlargement of the crest, high condition score and often long overgrown toes. Body weight by girth measurements, crest size and condition score should be monitored at least weekly, with twice weekly assessment during high risk periods. Other breeds of horses such as Quarter horses, Morgans, Saddlebreds, Standardbreds, and Thoroughbreds, particularly those individuals that are easy keepers or good

doers, should be monitored regularly during high risk periods when grazing high risk pasture.

HINT

Map the animal's condition score on a weekly basis, assess size of crest, length of toe on the hoof, and check pasture growth at least twice weekly during early Spring or periods of rapid growth. If the crest development and condition score increase to an obese score, then reduce the animal's intake of feed by fitting a mesh muzzle allowing only restricted grazing time, and increase the amount of exercise as a weight reduction measure.

Also, have the toes trimmed to reduce the rotation forces on the pedal bone by ensuring normal hoof shape and toe angles. However, do not exercise an animal that is already exhibiting clinical signs of founder like lameness. Founder is an emergency situation - Consult your vet for advice immediately.

TABLE 1
OPTIMUM CONDITION SCORE for
various Classes of Horse

<i>Class of Horse</i>	<i>Condition Score</i>
Dressage Horses	6 - 8
Endurance Horses	4 - 5
Eventing	4 - 5
Hunters	5 - 7
Open Mares	4 - 6
Polo and Polocrosse	4 - 5
Ponies on Spring Pasture	7 - 8
Pregnant Mares	7 - 8
Quarter Horses	6 - 8
Ranch Horses	4 - 5
Show Hacks	6 - 8
Showjumpers	5 - 7
Stallions (Breeding)	5 - 7
Stallions (Off season)	4 - 6
Standardbred Racing Horses	4 - 6
Thoroughbred Racehorses	5 - 7

Refer to Table 2 for method.

TABLE 2
STANDARD U.S. BODY CONDITION SCORING SYSTEM FOR HORSES *

SCORING METHOD: Each area should be assessed individually, the scores totalled, then averaged to give the Condition Score.

* Adapted from Henneke et al (1983) Equine Vet. J.15: 371-372

HINT: Score the neck first visually and then feel for fat; repeat for the withers, loin, tailhead, ribs, and finally shoulder. Add scores, divide by 6 to give Condition Score.

Condition Score	General Condition	Neck	Withers	Loin	Tailhead	Ribs	Shoulder
1	Very Poor	Individual bone structure visible	Bones easily visible. No fat.	Spine bones visible. Ends feel pointed.	Tailhead and hip bones very visible.	Ribs very visible and skin furrows between ribs.	Bone structure very visible.
		Animal extremely emaciated; no fatty tissue can be felt.					
2	Very Thin	Bones just visible. Animal emaciated.	Withers obvious, very minimal fat covering.	Slight fat covering over vertical and flat spin projections. Ends feel rounded.	Tailhead, hip bones obvious.	Ribs prominent, slight depression between ribs.	Bone structure can be outlined.
3	Thin	Thin, flat muscle covering.	Withers accentuated with some fat cover.	Fat build-up halfway on vertical spines, but easily discernible. Flat spinal bones not felt.	Tailhead prominent. Hip bones appear rounded, but visible. Pin bones covered.	Slight fat cover over ribs. Rib outline obvious.	Shoulder accentuated, some fat.
4	Moderately Thin	Neck some fat, not obviously thin.	Withers not obviously thin, smooth edges.	Slight ridge along back.	Fat can be felt.	Faint outline visible.	Shoulder not obviously thin.
5	Moderate	Neck blends smoothly into body.	Withers rounded over top.	Back level.	Fat around tailhead beginning to feel spongy.	Ribs cannot be seen but can be easily felt.	Shoulder blends smoothly into body.
6	Moderately Fleshy	Fat can be felt.	Fat can be felt	May have slight inward crease.	Fat around tailhead feels soft.	Fat over ribs feels spongy.	Fat layer can be felt.
7	Fleshy	Visible fat deposits along neck.	Fat covering withers is firm.	May have slight inward crease down back.	Fat around tailhead is soft and rounded off.	Individual ribs can still be felt.	Fat build-up behind shoulder.
8	Fat	Noticeable thickening of neck.	Area along withers filled with fat.	Crease down back evident.	Tailhead fat very soft and flabby.	Difficult to feel ribs.	Area behind shoulder filled in flush with body.
		Fat deposited along inner buttocks					
9	Extremely Fat	Bulging fat.	Bulging fat.	Obvious deep crease down back.	Building fat around tailhead	Patchy fat over ribs.	Bulging fat.
		Fat along inner buttocks may rub together. Flank filled in flush.					