

## ESTIMATING BODY WEIGHT OF HORSES

### Body Measurements

Various body measurements are used singly or together to estimate the body weight of horses. The weight tape normally uses the girth measurement. The girth measurement alone has a correlation of 0.87 ( $p < 0.001$ ) while girth and length has a correlation value of 0.90. This is the most accurate estimate as reported by Carroll and Huntington.

### Adult horses:

$$\text{Wt (kg)} = [(\text{girth})^2 \times \text{length}] \div Y$$

where  $y = 11900$   
(measurements are in centimetres)

### Foal weight 0 - 60 days:

$$\text{Wt (kg)} = [\text{heart girth in inches} - 25] \div .07$$

The average thoroughbred or standard-bred foal will double its weight in the first 28 days.

### Weight Tape

A weight tape is a simple and effective way to estimate a horse's weight at a fraction of the cost of a weigh scale and with minimal effort.

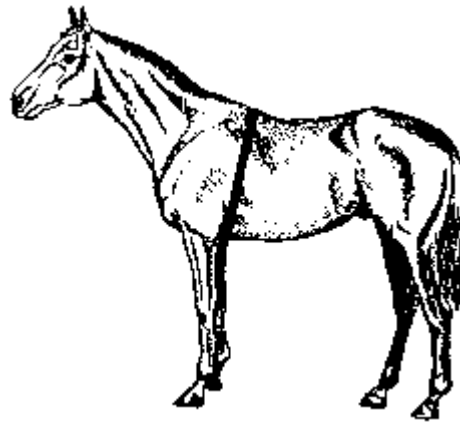
Weight tapes are readily available in most tack and feed shops. The weight is determined by wrapping the tape around the heart girth of the horse, directly behind the elbow (Figure 1), overlapping the ends of the tape, and reading the resultant weight. The reading should be taken with the tape snugly in place, at the time of respiratory expiration.

Tape accuracy is dependent on the user, the breed of horse and age. They are useless on miniature horses and foals. They are also inaccurate on high withered horses. However, on the average horse, they estimate the weight of a horse more accurately than most owners. The following table (taken from Lon Lewis' Feeding and Care of the Horse) will help you to estimate the weight of a horse by its girth measurement when a weight tape is not available.

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Girth Length		Weight	
(inches)	(cm)	(lbs)	(kg)
30.	76	100	45.5
40.	102	200	91.
45.5	116	300	136.5
50.5	128	400	182.
55.	140	500	227.
58.5	148	600	273.
61.5	156	700	318.
64.5	164	800	364.
67.5	171	900	409.
70.5	178	1000	455.
73.	185	1100	500.
75.5	192	1200	545.
77.5	197	1300	591.

Figure 1. Using a Weight Tape



### Nomograms

The following charts provide alternative ways of estimating a horse's bodyweight. They were developed by C. L. Carroll and P. J. Huntington.

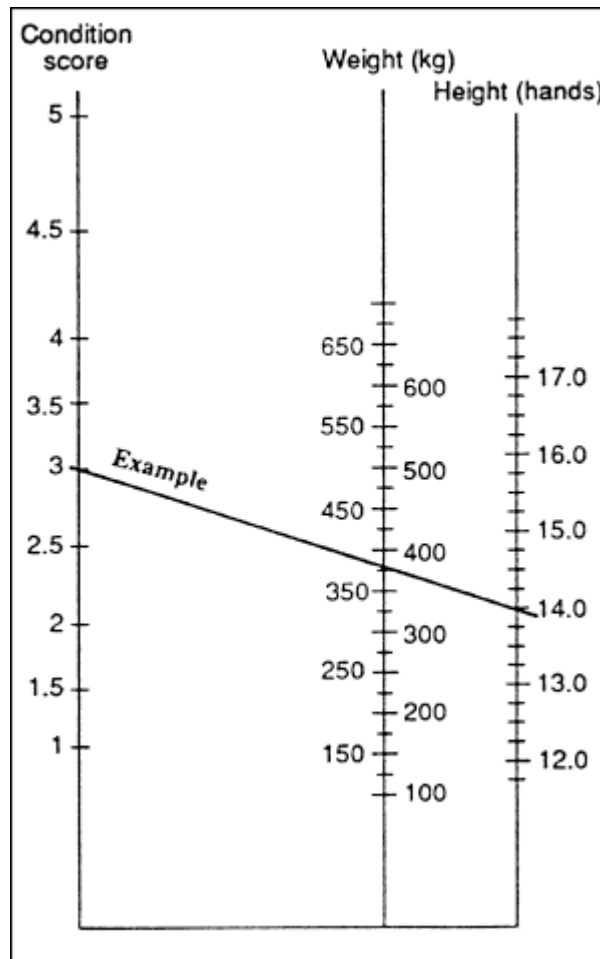
The first method relies on the assessment of body condition score and height at the wither. (For further reading on Body Condition Score, see OMAFRA Factsheet No. 98-101, Body Condition Scoring of Horses or the References by Henneke et al. and Rudman et al. ) It gives good results for all but horses in racing condition. The more accurately height and condition score are established, the better the weight assessment will be.

Ensure that the horse is standing squarely on level ground, is relaxed, and with the head in the normal position before measuring its height.

Make allowance for the thickness of the shoes. To calculate, run a straight line on the chart between the horse's known body condition score and height, then read its weight on the centre axis. In the example below, a 14 hand pony, scoring 3 points on the condition scoring chart, shows an estimated body weight of 375 kg.

### Method One

Nomogram for estimating bodyweight from condition score and height measurement.

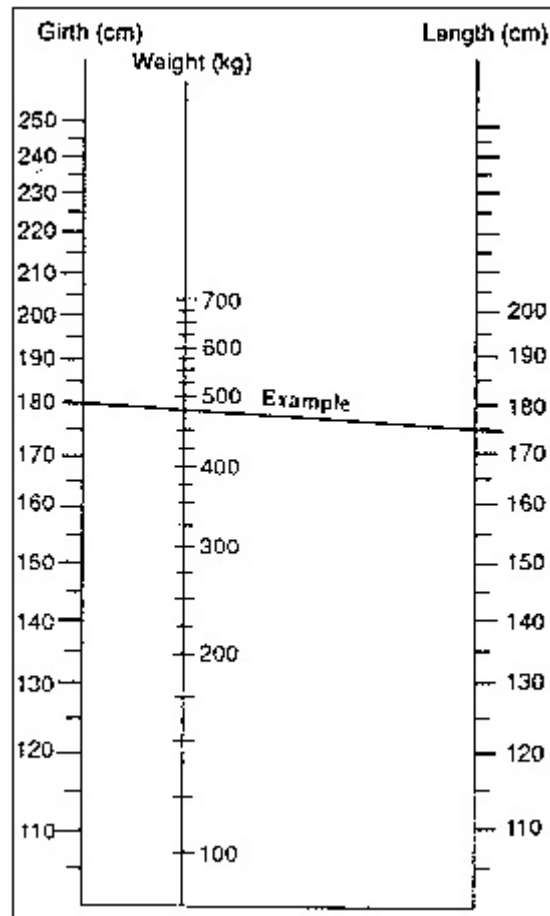


The second method, which relates measurement around the girth to length, is slightly more accurate and is the method to be used for racehorses in full work. The girth measurement is taken immediately behind the elbow after the horse has breathed out. Length is taken from the point of the shoulder to the point of buttocks (tuber ischii). To calculate, run the straight line on the chart between the known girth and length. In the following example, a horse with a girth of 180 cm and length of 175 cm shows an estimated body weight of 475 kg.

Measurements of girth, height, length and body condition scoring are used in the various systems to estimate body weight. None of these systems completely replace the accuracy of a weigh scale when used over an extended period. However, they are often more accurate than a horseman's eye.

### Method Two

Nomogram for estimating bodyweight from girth and length measurements.



### References

Carroll, C. L., and P. J. Huntington , (1988) Body Condition Scoring and Weight Estimation of Horses, *Equine Veterinary Journal* 20 (1), 41-45.

Lewis, Lon D., (1982) *Feeding and Care of the Horse*. Lea & Febiger, 1982.

Henneke, D. R., G. D. Potter, J. L. Kreider, and B. F. Yeates, (1983), Relationship Between Condition Score, Physical Measurement and Body Fat Percentage in Mares, *Equine Veterinary Journal* 15, 371-372.

Rudman, R., and R. R. Keiper, (1991), The Body Condition of Feral Ponies as Assateague Island, *Equine Veterinary Journal* 23 (6), 453-456.