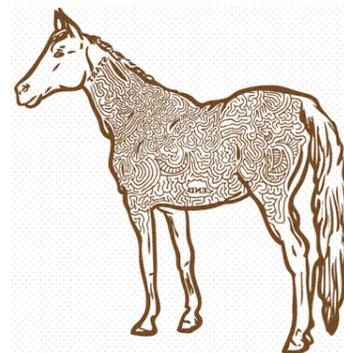




## ALWAYS “FIXED FORMULA” FOR CONSISTENT QUALITY, SAFETY & PERFORMANCE



### MANAGING THE DIET OF OLDER HORSES

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As with humans, chronological age in horses does not always match biologic age, the result of the aging process itself. By American Quarter Horse Association standards, a horse is aged when it is 16 years old. There are, however, many horses 20 years old and older that show no signs of slowing down. In general, horses can live to over 40 years of age, although a life span of 25 to 30 years is more common. **Most horses** will start to show signs of aging by the 24th or 25th year. If an aged horse has one or more of the problems discussed here, it may be a candidate for special care, but that does not necessarily mean retirement for the horse.

#### Arthritis and lameness in aged horses

Arthritis may significantly alter an aged horse's ability to move. This condition will require special attention, but the owner must understand that not all stiffness in an old horse is arthritis. If a horse appears to move with some difficulty at first but warms out fairly quickly, special shoeing or anti-arthritis drug therapy is probably not necessary. As with humans, years of general wear and tear, stress, and injuries can result in painful and crippling arthritic changes. To make an older horse more comfortable, the owner should consult with a farrier and a veterinarian regarding the optimal way to shoe or trim the hooves. The horse should be kept on soft footing or bedding. The bedding should not be too deep because that would make it more difficult for the horse to move around.

If the horse is in chronic pain, a daily dose of phenylbutazone may be prescribed. Some owners are using natural products that have not been scientifically proven to be effective. These include yucca and one of the older choices--apple cider vinegar, one-quarter cup added to the ration each day. The rationale offered for the use of the vinegar is that its acidifying effect may aid in calcium metabolism, which is often altered in older horses. However, it must be stressed that this mechanism of action has not been scientifically proven.

The horse should not be confined to a stall unless medical reasons make it absolutely necessary. If the animal is able to move about freely it will be less stiff. Ideally, there should be free access to turnout, preferably with a compatible horse for company. Shelter is essential, however, especially in winter.

#### Causes of weight loss

Weight loss is often seen in the older horse, even one that has good teeth, receives adequate amounts of available rations, and has no illness. The most common causes of weight loss, however, are in fact poor **dentition, debilitating** diseases, and failure to keep up with deworming schedules. The composition of the horse's diet may also play a role.

A study done at Colorado State University by Dr. Ralston showed that horses over 20 years of age had some changes in digestive ability relative to younger animals. These changes may affect an older horse's ability to maintain weight. The study indicated that aged horses have reduced digestion of fiber, protein, and phosphorus when fed a complete pelleted diet. In field trials and clinical cases involving aged horses, **improvements have been observed in body condition in aged horses when they were switched to a 14 percent protein diet containing more digestible fiber and fat (6 to 12 percent), and a carefully regulated calcium/phosphorus ratio.**

The reasons for the observed reduced digestion are not fully known, but it can be hypothesized that repeated parasitic infestations or changes in the microbial constituents of the digestive tract, or both, over 20 years or more may reduce the absorption of nutrients from the digestive tract. The same condition may also affect the synthesis of B vitamins and other nutrients such as biotin. The digestive profiles of the aged horses in the Colorado State study were very similar to those of horses after both left and right colons had been surgically removed.

### **Special winter care**

Aged horses are less tolerant of extremes in temperature, requiring more feed in the winter to maintain body weight than younger animals kept in the same environment. Severe weight loss in winter is commonly reported in these aged horses. In order to reduce such losses, special attention should be given to feeding more of a highly digestible high-fat diet. These measures will increase caloric intake. Only high quality hay should be fed. In addition, as already noted, aged horses should not be exposed to extreme cold without shelter.

### **Dealing with dental problems**

Dental problems, especially the loss of molars or pre-molars, may affect an older horse to the degree that it can no longer adequately chew its hay. In that case, the use of a complete balanced feed, preferably in pelleted form, is indicated.

"Complete" feeds are formulated to provide complete nutrition without added hay. They generally contain higher fiber and calcium than grain, grain mixes, or pelleted feeds designed to be fed with hay. Complete feeds formulated either for use in aged horses (available in some areas of the country) or for young horses ("growth" type formulas) are appropriate. Pelleted rations can be made into a mash or soupy mixture that does not need chewing.

When fed such a ration the horse will be provided with all the necessary nutrients and will have a reduced risk of choke, which may be a potential danger in older horses fed dry pelleted rations. If the state of the horse's teeth permits, good quality hay should also be available if for no other reason than the satisfaction chewing gives. Behavior studies have indicated that the quickly consumed pelleted diet leaves the horse with time on its feet (or, more accurately, teeth), which leads to boredom and a variety of behavior problems. Chewing hay can therefore be looked upon as time well spent. No more than five to six pounds of complete feed should be offered per feeding, although from 16 to 20 pounds can be fed per day to meet the horse's nutritional requirements.

### **A diet for Old Dobbin**

Based on the research done at Colorado State and at Rutgers by Dr. Ralston, the optimum diet for a failing geriatric horse should contain at least 12 percent and preferably 14 percent protein, assuming kidney and liver functions are adequate. **The calcium to phosphorus ratio should be no more than 2:1 but preferably 1.5:1.** There should be an increased intake of vitamin C as compared to the diet for younger horses. In a controlled study of aged versus young horses, Dr. Ralston found that most old horses have reduced plasma concentrations of vitamin C. This reduced concentration may be due to decreased synthesis of the vitamin in the liver or as a consequence of pituitary tumors. The effect of the tumors can be explained as follows: Because pituitary tumors cause chronically high levels of cortisol (the stress hormone) in the blood, this in turn causes an increase in vitamin C mobilization in the pituitary gland stores and subsequent secretion in the urine. Excretion may exceed the rate of synthesis and deplete the store of vitamin C.

The addition of from 7 to 10 percent vegetable oil to the diet supplies easily digestible calories, improves coat condition, and appears to improve overall digestibility of the ration. This translates into one to two cups of edible oil or fat added to a standard ration daily. Another option is to purchase feeds formulated with a high fat content. Increased B vitamin intake also seems to improve digestibility and overall well-being and appearance. There are many vitamin supplements on the market. Read the labels carefully; some may contain substances such as antibiotics that are not needed. Brewer's yeast is a popular source of B vitamins.

### **Supplementing the geriatric diet**

**Wheat bran and beet pulp are acceptable energy and fiber supplements for older horses. Nevertheless, several cautions are necessary. Wheat bran is extremely high in phosphorus, whereas beet pulp is high in calcium. If fed in equal amounts, these would produce the desired mix of minerals. However, if fed in large amounts (over four to five pounds of wheat bran/beet pulp mix per horse per day), calcium would be at levels above what the horse needs or might tolerate. Three to four pounds of bran per week is acceptable provided that feeds with an adequate calcium content--enough to ensure that the calcium in take is equal to or greater than phosphorus--are also fed. [Balancing the diet]**

Wheat bran can be fed dry, but beet pulp must be soaked in water for two to three hours before feeding because it swells in contact with moisture. If fed dry in large amounts, beet pulp may contribute to colic or at least discomfort as it increases in volume in the stomach.

**Alfalfa and other legumes have high calcium contents in addition to high protein (14 to 24 percent) but should be used with caution in aged horses to avoid burdening their kidneys with the need to excrete excess calcium.**

Edible oil or animal fat provides pure calories and can be added to the ration as well. However, no more than two cups per day should be fed to the average-size horse (1,000 pounds). Putting a small amount of fat or oil into the feed initially (one-eighth cup) and slowly increasing the amounts fed over a period of three to four days will improve the acceptance of this or any other additive.

### **Diet changes for certain types of tumors**

In a study by Dr. Ralston, 17 of 20 horses over 20 years of age had at least sub clinical or early pituitary or thyroid tumors. The clinical signs of a pituitary tumor in horses are failure to shed winter coat, muscle wasting, increased water intake and urination, skin and other chronic infections. High blood insulin and high blood glucose (insulin-resistant diabetes) are further complications in both pituitary and thyroid tumors. Many older horses become more prone to founder (laminitis), theoretically because of metabolic changes associated with pituitary or thyroid tumors. The long-term prognosis for horses with pituitary neoplasia is poor regardless of medical treatment, though many survive for years after the onset of gross clinical signs. Two drugs have been used to reduce clinical signs, but neither has been officially approved for use in horses. Pergolide is the most effective of these but is expensive. Cyproheptadine is somewhat less effective but relatively inexpensive. Neither of these drugs has been approved for use in horses and should be considered experimental.

Dietary management of these horses should aim at reduction of intake of readily soluble carbohydrates (high sugar, starch, sweet feeds, corn, etc.) and increased use of foods with lower sugar/starch content (barley, bran, beet pulp) to help control the high blood glucose associated with starchy feeds. Horses with pituitary or thyroid tumors also have high blood cortisol levels and low blood vitamin C. An increased vitamin C intake (5 to 10 grams per day) and increase in B vitamins in the ration are also helpful in managing these horses.

### **A diet for the failing horse**

When age itself or an incurable disease begins to take a toll, the diet should have at least 10 percent protein content (no more than this if liver or kidney failure is present) and at least 0.3 percent phosphorus, but be careful that there is not more phosphorus than calcium. The diet should be highly digestible but with an emphasis on complex carbohydrates and fat rather than on sugar or starch.

Some horses appear to do better on 12 to 14 percent protein rather than 10 percent. Provided that the horse's teeth are in good condition, this type of diet can be easily met by feeding top quality grass hay free choice. Hay may even be fed despite a horse's inability to chew, but it should not be relied upon as a major source of nutrients. The bulk of the diet for the failing older horse with poor teeth should be in the form of a **complete balanced concentrate** designed to be fed without hay. Any changes in the diet should be made gradually over the course of seven to 10 days.

As previously noted, management of a geriatric horse must also take the effects of environment into consideration. Remember that older horses are more sensitive to severe weather, be it heat or cold. Adequate shelter must be provided for all older horses and especially for a failing horse. Increased energy needs in winter must be met by increased feed. Recognition of common health problems associated with aging in horses will be of help to owners in making dietary changes and management choices that will make the last years happy ones.

**To retire or not to retire?**

If an aged horse is serviceably sound and used to a full and active life, the decision to retire it just because it is over a certain age may not be in the best interest of the animal. In Dr. Ralston's experience, old horses suddenly retired appear to go downhill more rapidly than those that continue in use in some capacity, if only for occasional "pony rides." Many riding programs rely heavily on these "old campaigners," and horses over the age of 20 years can be found commonly in the show ring, on competitive and endurance rides, and pulling carriages for pleasure, show, or business. In general, there is no need to rush a healthy but merely old horse into retirement.

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King and Integrifeed Senior feeds incorporate every precaution suggested by Dr. Ralston. Senior Delight is specially formulated as a soft chew with horses that have no teeth or difficulty chewing. Carboraid Senior is a low sugar/starch formula for horses that have metabolic issues, Cushings, IR, laminitis, founder.