Nutrition of Old Horses

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Before the 1990’s

It was considered to be “normal” for an old horse to be thin, shaggy and in overall poor condition.
Research done in the ’80s reported “age related” changes in horses >20 yrs old:

Decreased digestion/retention of protein, fiber and phosphorus, similar to total colon resection.

Intolerance of extreme temperatures

Hyperinsulinemia and low plasma ascorbic acid associated with pituitary tumors
However in field trials of “senior” feeds (early ‘90’s): benefits were seen only in aged horses with body condition scores <3/10.

No alterations were seen in healthy mares >20 years old tested in the mid ‘90’s and more recent studies in this decade.
Digestive changes with age?

Digestive alterations due to chronic parasitic damage?

Horses with pituitary dysfunction had higher fecal egg counts before AND AFTER deworming than site and age matched controls.

Many horses >20 years old are healthy, athletic and/or reproductive animals that do not need special nutrition or care.
When is a an aged horse in need of special nutrition?

- Weight loss/obesity
- Abnormal Dentition
- Pituitary dysfunction
- Chronic Laminitis
- Renal/hepatic dysfunction
- Chronic infections
- Tumors?
- Arthritis?
When evaluating failing older horses, consider factors which may alter nutritional needs:

- **Activity**
- **Body and coat condition**
- **Environment**
- **Social issues**
Common alterations with advanced age

Arthritis: Avoid prolonged confinement

Reduced tolerance of weather extremes: adequate shelter is essential.
Small points and hooks (< 7mm) do not adversely affect digestion but should be removed. (Ralston et al, 2001).

Large hooks and points, wave mouth, extreme occlusal angles (shear mouth) may reduce ability to chew fibrous feeds.

Avoid excessive filing.
Equine odontoclastic tooth resorption and hypercementosis (EOTRH)

Chronic infections

Pituitary dysfunction
Low hepatic ascorbic synthesis?
Difficulty with hygiene in hirsute individuals
Essential Blood work

• CBC: rule out chronic infection, anemia

• BUN/Creatinine: Renal function

• Hepatic enzymes: Hepatic function

• Dexamethasone suppression/ACTH stimulation for Pituitary function
Glucose/Insulin:

Do not over interpret a single sample!
Both change rapidly in response to a wide variety of conditions
Must consider when and what last fed, time of day, time of year
Obesity and/or pain alone will cause hyperinsulinemia and hyperglycemia
Nutritional Consequences

• Dentition: Inability adequately chew feed: need pelleted or extruded formulations.

• EORTH: Inability to graze: Need chopped forages or total mixed rations (TMR).

• Pituitary/thyroid dysfunction: Reduced glucose tolerance, low Vitamin C/immune function: need low sugar/starch, Vitamin C/E supplements?

• Chronic parasitic scarring of GI: Reduced protein and phosphorus retention: Need higher intakes of these nutrients.
Dietary recommendations

For those with normal hepatic/renal function but other age related issues:

Total ration (forage plus concentrate)

Crude Protein: 10-14%
Phosphorus: 0.3-0.5%
Calcium: 0.5-0.9%
Crude Fiber: 10 (?)-20%
Crude fat: 5-10%

Avoid high (>3%) molasses
Maximize forage as much as possible
Feeds

Pelleted or extruded high fat/fiber concentrates

Minimize textured grain-based sweet feeds

Free choice forage or hay

Minimize legume intake

Alternates for dentally challenged:

Beet pulp or forage-based pelleted or extruded feeds

Soaked cubed hay biscuits or pellets
Other Supplements
Ascorbic Acid?

Vitamin C (0.02gm/kg BW twice a day) ONLY if immune function compromised. Once initiated will need to be continued for life or tapered off VERY slowly (2-3 weeks)
Feeding old horses with clinical diseases
Renal Failure

Feeds recommended:
- Grass hays
- Corn/oats/barley based concentrates
- Edible oils
- Fat soluble vitamin supplements

AVOID: Legumes, beet pulp (High Ca)
- Brans (High Phosphorus)
Hepatic Failure
Hepatic Failure

Feeds recommended:
Grass hays
Corn/Barley/molasses concentrates
B-vitamin, Vitamin C supplements

**AVOID:** Soybean Meal, wheat bran, oats?

high protein and tryptophan
Malnourished/Starved
Old Horses
Emaciated old horses

Check teeth, hepatic, renal function

Deworming/parasite status

Avoid sweet feeds/high carbohydrate until stabilized (2-3 weeks)

Legume hay (if hepatic/renal ok and only until stabilized), forage based cubes, pellets or extruded “complete” feeds, ad lib salt and water, balanced vitamin/mineral supplement.
It is no longer “normal” for an old horse to be thin!

However, it is better to feed a less than ideal ration than to feed nothing at all.