

## Nutrition of Old Horses



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**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 alterations due to chronic parasitic damage?



**Strongyle scarring**



**Tapeworms**

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

**McFarlane et al, JAVMA 236:330-334, 2010.**

**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?**

# Evaluation

**When evaluating failing older horses, consider factors which may alter nutritional needs:**

**Activity**



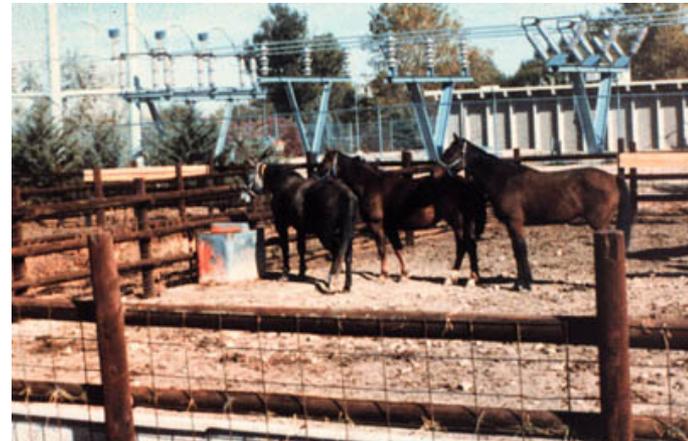
**Body and coat condition**



**Environment**



**Social issues**



## Arthritis: Avoid prolonged confinement



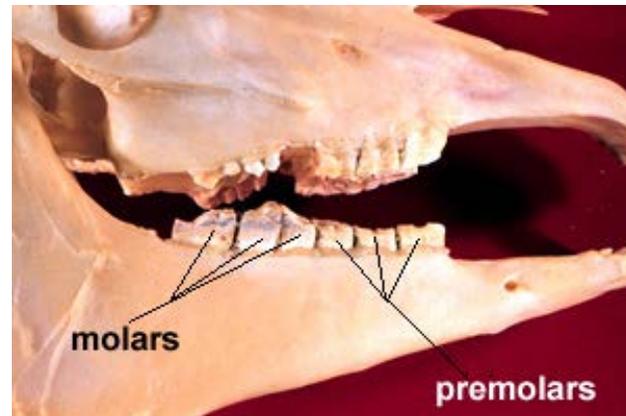
**Reduced tolerance of weather extremes:  
adequate shelter is essential.**

# Dentition Is Critical

**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)



Normal Incisors



Advanced 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.**

**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**

**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**

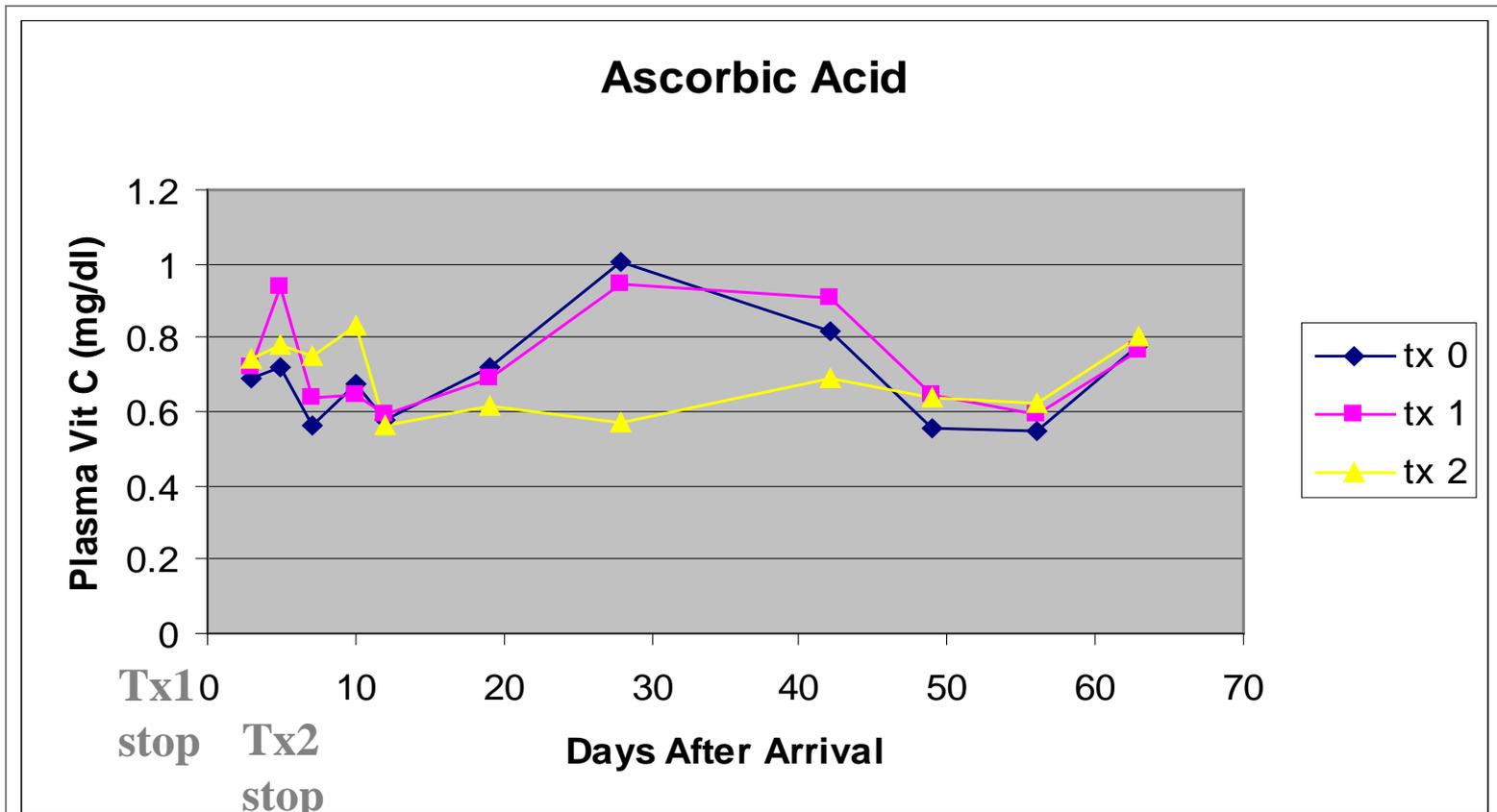
**Soaked cubed hay biscuits or pellets**

# 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)**



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# 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**

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# Malnourished/Starved 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**