

Horse Trails and Tales

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Osteochondrosis Revisited

In 1985, Dr. Knight and co-workers reported that a survey of farms for prevalence of osteochondritis found that weanlings on high copper diets had a lower prevalence of osteochondritis. She suggested that the diets of these Kentucky youngsters might need to be as high as 30 to 50 ppm for good skeletal health.

In 1993, Hurtig fed weanlings diets containing either 8 or 25 ppm copper and found that all the horses on the lower copper diet had inferior collagen, biomechanically weak joint cartilage and 5 of 9 developed clinically obvious osteochondritis. It is also well known that exposure to excessive amounts of zinc, which inhibits copper absorption, will reliably produce cartilage fractures and flaps.

Despite this, and further studies by Dr. Knight and others which showed that low copper intake interferes with the young horse's ability to naturally heal osteochondrotic lesions, her suggestion of higher copper intake for pregnant mares and growing foals has been hotly contested and is still not accepted by the National Research Council (although supplement and feed companies, as well as nutritionists, largely do provide generous levels to horses in those categories). There have also been studies where

Easy Tips

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- Osteochondritis is multi-factorial.
- Diet, particularly trace minerals, plays a key part in its development.
- Balancing the trace minerals is important, not just providing the minimum amounts.
- Excess of one type of mineral can inhibit the absorptions of others.
- Balance is the key.

What both sides are failing to take into account is imbalances and excesses in the natural diets.

supplementation had no effect.

Why the controversy? Who is right here? I think they both are.

When copper metabolism is studied in controlled studies, there is no justification found for feeding higher than the 10 to 12 ppm currently recommended by the NRC. However, what both sides are failing to take into account is imbalances and excesses in the natural diets. A typical hay analysis from Kentucky will have 90 to 100+ ppm of iron and manganese and be deficient in copper and zinc. Restoring copper intake to the minimum recommended by the 10 to 12 ppm guideline does not correct those imbalances – but feeding 30 to 50 ppm does.

In other words, the copper requirement per se was not higher, but for copper absorption and metabolism to function normally it has to be free

of interference. It's like a chemistry experiment or baking a cake. "It's in there" won't cut it. You need the correct ingredients in exactly the correct amount.

I was consulted regarding an osteochondritis issue on a large thoroughbred breeding farm. From 25 to 30% of all weanlings had the problem, many requiring surgery. They fed a high quality diet, but the "balancing" had been done by a feed company's software program, which only looks for deficiencies and ignores excesses/imbalances. After the first year of truly balanced supplementation through all of pregnancy and weaning, the number dropped drastically and they were able to identify a specific bloodline cross as still being problematic.

Balance truly is the key.

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