



Hair Analysis as an Indicator of Nutritional Status

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Hair analysis is often advocated for humans and horses as a reliable means of evaluating nutritional status of trace minerals. For example, one advertisement on the internet reported that hair analysis could detect mineral imbalances in the body. It was suggested that many conditions in humans such as anemia, allergies, depression, diabetes, emotional problems, hyperactivity, hypertension, hypoglycemia, and prostate disorders may result from or be aggravated by a mineral imbalance and a "hair analysis allowed a correct program of diet and supplementation to be designed for each individual's specific needs." It was claimed "Never before has there been available a metabolic blueprint with such a degree of applicable scientific accuracy" and "Hair analysis is the most efficient means of determining exactly what vitamins and minerals you do need."

Another internet advertisement claimed "Few avenues exist which can predict, explain and suggest nutritional solutions to depression, anxiety, phobias, insomnia, spaciness and hyperactivity. Hair analysis, properly interpreted is one."

However many scientists report that hair analysis has little value. Dr. Stephen Barrett¹ wrote that hair analysis is not reliable for evaluating the nutritional status of individuals. Many factors affect hair content including color, diameter, rate of growth, season

of year, geographic location, age, and gender of the individual. He also reported that no correlations have been established between hair mineral content and other indicators of nutrition status. He wrote "It is possible for hair concentration of an element (zinc, for example) to be high even though a deficiency exists in the body." He discussed many other conditions why hair analysis is of little value and concluded, "Should you encounter a practitioner who claims otherwise, run for the nearest exit!"

Many of the same arguments probably could be stated for livestock, although research is much more limited than in humans.^{2,3,4} Perhaps the most damning report is by Seidel et al.⁵ They sent hair from a split sample of hair taken from the scalp of a single healthy volunteer to six commercial laboratories which analyze 90% of hair samples submitted for analysis of minerals in the United States. The cost for analysis varied from \$30 to \$69 per sample. Nineteen elements (Al, As, Ca, Cd, Co, Cr, Cu, Fe, Hg, K, Mg, Mn, Mo, Na, Ni, P, Pb, Se and Zn) were analyzed by all laboratories except Co, Ni, and P were not analyzed by one of the laboratories. Selenium values ranged from 0 to 1.32 ppm. Four laboratories reported that the phosphorus content was low and two reported normal phosphorus. Five reported low calcium and one reported normal calcium. The reports of copper contents were reasonably consistent, a range of 11 to 15 ppm but two of the six laboratories said the content was low. Manganese values ranged from 0.02 to 0.11 ppm and were considered low by all six laboratories. Arsenic

values ranged from values considered low to very high. The laboratories provided conflicting recommendations for dietary changes because of the vast differences in reported results.

Seidel et al. concluded "Hair mineral analysis from these laboratories was unreliable and we recommend that health care practitioners refrain from using such analyses to assess individual nutritional status or suspected environmental exposures."

REFERENCES

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