

Wellness & Compliance

Antioxidants have been called the fountain of youth because they demonstrably impact wellness and longevity in both pets and people. Degrees of wellness are often age related, and cellular damage that can lead to adult onset diseases and unhealthy aging can be prevented. The widespread interest in nutritional antioxidants for human health, vitality, and longevity has made clients more open to recommendations of a diet rich in antioxidants for the family pet.

KEY POINTS

- Antioxidants help protect all body systems from free radical damage.
- Increased antioxidants in dog and cat food can prevent or reduce damage from oxidative stress.
- Enhancing the antioxidant defense system may extend lifespan.
- A combination of antioxidants creates a synergistic effect that offers greater protection.
- Of the two types of antioxidants (natural and synthetic), synthetics are more stable and can withstand heat, pressure, and moisture during food processing.

DAMAGING EFFECTS OF FREE RADICALS

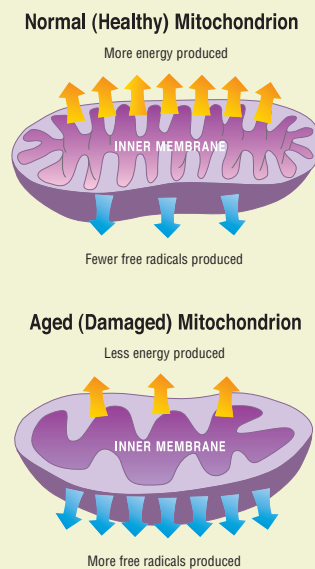
At the cellular level, the mitochondria extract energy from foods and make it available to the body. Toxic free radicals, the by-product of energy extraction, are highly unstable. They may react with biomolecules such as DNA, lipids, or proteins to create new free radicals, forming a chain reaction that may eventually lead to cell mutation, neoplastic transformation, loss of cellular function, and ultimately, cell death. Antioxidants can interrupt this chain reaction.

Some antioxidants and components:

- Vitamin E works with enzymes that help prevent peroxidation of cell membranes.
- Vitamin C inactivates free radicals and regenerates Vitamin E.
- Selenium protects cell membranes and helps reduce free radical generation.
- Beta-carotene scavenges free radicals and acts synergistically with Vitamin E.

Other key nutrients that can contribute to cellular protection:

- L-carnitine is a mitochondrial cofactor that improves cellular efficiency.
- Omega-3 fatty acids help support cell membranes.
- Lipoic acid vitalizes and enhances the effects of vitamins E and C in dogs.
- Fruit and vegetable carotenoids and flavonoids help eliminate cell damage by neutralizing free radicals within cell membranes.



CASE STUDY

WELLNESS Penny & Spice



Hx

Penny

- 9-year-old spayed female domestic shorthair
- Neutered at 6 months
- 7 pounds, BCS 3 (ideal)

Spice

- 6-year-old spayed female Boxer
- Neutered at 6 months
- 60 pounds, BCS 3 (ideal)

Dx

- Both pets presented for annual physical exam and wellness checkup

Rx

- Recommendations for better nutrition for both Penny and Spice have been made previously, but Mrs. Reed continues to purchase grocery store food.

PROBLEM

Client has not accepted food recommendations for her dog and cat.

SOLUTION

Please turn the page ...

SOLUTION

Both Penny and Spice have been patients at the Prairie Road Animal Hospital for their entire lives, coming in at least once a year for a checkup. By now Dr. Hopkins knows them pretty well and he has made food recommendations over the years, but to no avail, as Mrs. Reed had never seen the need to purchase the recommended food as long as her pets appeared healthy. Although not ill at presentation, the 2 animals didn't seem as vibrant as they had been at their last visit a year ago. Dr. Hopkins reminded Mrs. Reed that the animals actually were really a lot older than she realized — Penny at age 9 is a senior cat and Spice at age 6 is entering middle age.

Recommendation

Dr. Hopkins reminded Mrs. Reed that as people get older, they should change their diets to boost their immune systems, explaining that he was recommending the same thing for her pets. He asked his technician, June, to go over dietary changes for Penny and Spice with Mrs. Reed, emphasizing that an antioxidant-rich diet could help prevent the health risks associated with free radical damage and aging, and might also help both pets regain their vitality and alertness. June also explained how to make the transition to the new food by gradually introducing it into their regular food (see table)

- For Spice – Hill's® Science Diet® Advanced Protection™ Adult dog food
- For Penny – Hill's® Science Diet® Advanced Protection™ Senior cat food

Acceptance

Mrs. Reed had been reading about the importance of antioxidants for human health and had thought about changing her own diet, but had not realized that it might be important for her pets. It made sense to her to follow Dr. Hopkins' advice and she agreed to take home 1 bag of the recommended food for each of her pets to try for 30 days.

TRANSITIONING TO NEW FOOD*
DOGS & CATS

Days 1 & 2	25% new	75% old
Days 3 & 4	50% new	50% old
Days 5 & 6	75% new	25% old
Day 7	100% new	

* Short schedule for healthy animals adapted from **Small animal clinical nutrition: an iterative process** in Hand MS, et al (eds): *Small Animal Clinical Nutrition*. Topeka KS: Mark Morris Institute, 2000, pp 1-19.

Follow-Through

A few days later, June called Mrs. Reed to find out how Penny and Spice were making the transition, and they seemed OK with it. Three weeks later, she called again and found that Mrs. Reed was amazed at the difference in her 2 pets. Penny had become a more energetic and playful cat, was more alert, and was not sleeping as much. Spice had changed as well, behaving like a younger, friendlier dog and greeting Mrs. Reed more enthusiastically each evening when she returned from work. June told her that they had seen this many times, and that she was happy the new foods had worked for her pets.

Outcome for Penny and Spice

Wellness for Mrs. Reed's dog and cat meant finding a food that decreased risk of age-related behavioral problems as well as potential for disease. Their renewed vitality, activity level, and increased interaction with her reminded her how much fun they were and she was happy to provide them with the better quality food.



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In his recommendation, the doctor used a “bridging” technique to help the client quickly understand the need for a dietary change for her pets. He started with something she should be familiar with – the importance of antioxidants for people – and connected it to the potential benefits for Penny and Spice. Staff played an important role by reviewing the new dietary plans with the client in the office, then by follow-up calls to check on the animals and provide support and reinforcement. Pet diet changes often are won or lost in the first 36 hours – if pets resist the change, clients often give up. Calls at home by a compliance team member help clients successfully navigate this critical stage of the diet transition.

FORMULA FOR COMPLIANCE SUCCESS†

$$C = R + A + FT$$

C = Compliance standards of quality patient care

R = Recommendation & Reinforcement by health care team

A = Acceptance of protocol by owner

FT = Follow-Through by health care team

†See also, *Compliance in Companion Animal Practices*, © 2003 American Animal Hospital Association (info@aahanet.org), sponsored by an educational grant from Hill's Pet Nutrition, Inc.

REFERENCES

Antioxidants in Nutrition, Health, and Disease. Gutteridge JMC, Halliwell B. Oxford, New York, Tokyo: Oxford University Press, 1994, pp 91-110.

Long-term treatment with antioxidants and a program of behavioral enrichment reduces age-dependent impairment in discrimination and reversal learning in beagle dogs. Milgram NW, Head E, Zicker SC, et al. *Exp Gerontol* 39(5):753-65, 2004.

