

## HEALTH NEWS

# Stress Impacts Feline Health

CATS DO NOT LIKE CHANGES IN THEIR DAILY ROUTINES, AND any variation has the potential to be a life stressor. Our feline companions crave stable routines and can become very stressed by something as simple as having company over for dinner, rearranging furniture, being fed late or being cared for by a different person. Aside from causing anxiety and fear, these life stressors can also affect physical health.

A 2011 study at Ohio State University evaluated the effects of external stressors on the health of both healthy cats and those with underlying disease. The two groups of cats were housed in individual cages and given predictable daily routines that met their needs for interaction, entertainment and enrichment. The healthy cats and those with underlying disease were observed to have the same number of sickness symptoms when they lived under the stable enriched housing conditions. This finding suggests that providing a proper environment may significantly help cats afflicted with health problems.

The study also showed that exposure to life stressors significantly increased the number of sickness symptoms observed in both groups of cats. Examples of symptoms included vomiting, diarrhea, reduced appetite and eliminating outside of the litterbox. Some of the life stressors utilized in the study were cooler temperatures; changes in caretakers; introduction of dogs into nearby areas; loud, unpredictable noises; introduction of new cats and moving cats to different cages. These results suggest that sickness symptoms are more closely related to stress than disease status since both groups were equally affected.

The importance of reducing life stressors is something we might think about to help our own health. It is also important to recognize the unique needs of our feline companions and how simple changes can affect their well-being. For information on creating a happy and healthy indoor environment for your cat, visit the Indoor Cat Initiative website (<http://indoorpet.osu.edu>).



# Diet Influences Drug Metabolism

The feline species is unique in many ways. Unfortunately, some of their distinctive characteristics make them vulnerable to substances that are better tolerated by other species, such as dogs and people. One serious danger to cats is their impaired ability to metabolize certain drugs such as acetaminophen (Tylenol) and aspirin. Ingestion of one adult tablet of acetaminophen can be lethal to cats. Many plants contain compounds similar to those found in drugs such as acetaminophen. Because of an enzyme deficiency within their livers, cats lack the ability to metabolize these drug/plant compounds. Effective metabolism would convert the drug/plant compound to a nontoxic substance that could be more readily eliminated by the body.

In a 2011 study, researchers at Tufts University

discovered the gene mutation responsible for this metabolic deficiency in cats. They determined that the mutation occurred as many as 35 million years ago when the feline family branched off from similar species. Drug metabolism did not evolve to metabolize synthetic drugs, but rather to detoxify chemicals in plant-based food. As the feline lineage began to eat an entirely meat-based diet, the need for such a metabolism process became obsolete. All the species studied with the mutated gene had a diet consisting of more than 70 percent meat.

This is the first study identifying the origin of a gene mutation that resulted in a major drug metabolism deficiency during evolution. Results may help us better understand why species differ in their abilities to metabolize and eliminate drugs from their bodies.

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