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Therapeutic

De-Stressing Foods for Cats

Some cats are easily stressed by things such as unfamiliar people, other pets and noise. Signs of feline stress and anxiety may include aggression, urine spraying or going outside the box, compulsive licking, hiding and not eating. Owners wish to comfort their anxious cats. The marketplace offers calming products in the form of collars, plug-in diffusers and sprays that are claimed to emit volatile relaxants. Chews making de-stressing claims are also available.

Cat foods for stress relief are almost exclusively found among the therapeutic foods. The primary or secondary disease indication of these foods is lower urinary tract disease, particularly so-called feline idiopathic cystitis (FIC). Affected cats show abnormal urination that may be frequent, painful, difficult, bloody or at inappropriate places. Clinical signs usually resolve spontaneously, but recur after variable periods. Stress is assumed to mediate the development of FIC.

As treatment of FIC, veterinarians often recommend stress reduction through environmental modification and/or a therapeutic food containing hydrolysed milk proteins and extra L-tryptophan. The hydrolysate is positioned as a source of alpha-casozepine, a small protein purported to inhibit anxiety. However, the quantitative equivalent to effective alpha-casozepine is unknown. L-tryptophan is an essential nutrient present in proteins. It is advanced to stimulate brain serotonin synthesis thereby promoting better mood.

Current research data on L-tryptophan and alpha-casozepine supplementation are inadequate to substantiate their application in feline stress management. There is no scientific evidence that therapeutic de-stressing foods are effective in anxious cats or in FIC for that matter.

L-tryptophan

The tryptophan allowance for adult cats is 78 mg/MJ of metabolisable energy (1), which corresponds with 0.12 percent in a dry food (1.55 MJ/100 g). Complete dry foods for healthy, adult cats generally contain at least 0.20 percent. L-tryptophan can be converted into serotonin, which is believed to enhance mood. Supplemental L-tryptophan can only reduce stress when the pathway leading to serotonin is not saturated with substrate.

In a double-blinded study (2), the food of multi-housed cats was topped with a placebo (n=12) or L-tryptophan (12.5 mg/kg body weight.day; n=13) for 8 weeks. The tryptophan content of the food is not reported. Additional L-tryptophan (about 50 mg/MJ) reduced agonistic and house-soiling behaviour. It also restricted affiliative and explorative behaviour, which is undesirable. The data are insufficient to select dose and support effectiveness of supplemental L-tryptophan in feline stress control.

Alpha-casozepine

Tryptic hydrolysis of alpha-S1 casein from bovine milk yields alpha-casozepine as one of the products. The decapeptide binds to the GABAA receptor and may elicit an anxiolytic effect. Anxious cats with social phobias were enrolled in a double-blinded trial that lasted 8 weeks (3). They received either alpha-casozepine (15 mg/kg body weight.day; n =17) or the placebo (n=17). None or non-standardised behavioural modification was introduced simultaneously. No information on the cats' diet is given.

Successful treatment was defined as improvement in both investigators' behavioural score and owner evaluation. The success rate was 10/17 and 4/17 for the test and control cats. Alpha-casozepine raised the score for fear of strangers from about 1 to 2. Score 1 stands for 'comes to observe, but cannot be touched' and score 2 for 'initiates contact, but cannot be touched'. Practical meaningfulness of the study's outcome is disputable, while reproducibility is unknown.

Casein

Diet effects on stress have been assessed as the increase in plasma activity of dopamine-beta-hydroxylase upon immobilizing cats for two hours. Enzyme activity was based on octopamine formation from tyramine. Dietary casein versus soya concentrate diminished the stress index (4) or had no effect (5). When compared with a commercial diet, a semipurified diet containing casein lowered stress, but skimmed milk instead of tofu in the diet raised it (6).

The inconsistency in results may relate to multiple dietary variables. It says nothing about L-tryptophan and alpha-casozepine. Substituting soy protein for casein did not significantly affect L-tryptophan intake. Possibly, alpha-casozepine in chemically isolated casein is inactivated or not released during digestion.

Therapeutic foods

Two studies have evaluated a dry, therapeutic calming food containing hydrolysed milk proteins and 213 mg L-tryptophan/MJ (7, 8). Indoor cats were subjected to stress through veterinary examination and blood sampling before and after 8 weeks of feeding either the therapeutic (n=10) or a reference dry food (n=11). Diet did not affect the change in plasma cortisol concentration as index of acute stress. Fearful cats were fed either the therapeutic (n=12) or a regular dry food (n=12) for 4 weeks. The therapeutic food tended to improve behaviour in an open-field test, but was ineffective in a human-interaction test.

In an open, non-controlled trial, 10 cats with idiopathic cystitis were fed a therapeutic food in dry or wet form or combination thereof (9). The foods contained milk protein hydrolysate and on average 235 mg L-tryptophan/MJ. Switching to the therapeutic food was associated with individual advice as to environmental enrichment. After 8 weeks, anxiety-related behaviours had improved when compared with baseline scores. However, effects of environmental enrichment, bias and/or time cannot be excluded.

L-theanine

A few calming claim on cat food may rest on added green tea extract. L-theanine from tea leaves is supposed to act as tranquilizer. An open, non-controlled trial asserts the efficacy of L-theanine in cats (10).

List of references is available on request from the author (beynen@fiver.nl)

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