

Dietary fiber, satiety and weight control in pets

It is an assumed wisdom that diets high in insoluble fiber promote satiety through sensation of fullness and thus reduce voluntary energy intake. The insoluble cellulose fiber provides zero calories and is often used as caloric diluter in light foods and veterinary weight-reduction diets for dogs and cats. These fiber-enhanced foods may bear satiety claims.

Globally, at least 30% of dogs and cats are overweight or obese. Light foods are marketed for weight maintenance in overweight-prone animals. They contain 6 to 12% crude fiber, whereas regular dry foods have 1.5 to 4% and canine weight-reduction diets up to 22%. Petfood labels must declare the content of crude fiber, representing a measure of insoluble fiber.

Dogs given time-limited access to cellulose-rich diets increase the volume of food ingested without entirely compensating for the lower caloric density of the food so that they eat less energy. This feeding behavior appears unrelated to satiety. Offering a palatable, low-fiber diet shortly after free access to cellulose-rich food, made dogs markedly top up their previous intakes of dry matter and energy.

Feeding calorie-restricted amounts of high-fiber foods does not suppress hunger between meals. When dogs were presented unrestricted quantities of a regular food three hours after the introduction of a restricted amount of high-fiber food, they brought about a two-fold increase in their daily energy allowance.

Under free-choice feeding conditions, cats do not significantly change bulk intake upon diluting their food with cellulose. Hence, they consume fewer calories. Cats given access to wet food supplemented with cellulose for six hours per day maintained dry matter intake. Subsequent dishing up the cellulose-free food enlarged the intake considerably. Apparently, cellulose had not induced satiety.

Dietary fiber may not induce satiety, but it can contribute to weight management in pets. Putting out high-fiber food once daily for about 45 minutes restrains obesity development or induces some weight loss in dogs. Cats self-restrict calorie intake and control body weight when fed on a dry, high-fiber, low-calorie diet, but there will be noticeable inter-individual variation.

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