

NECESSARY NUTRIENTS

Creating an appropriate weight loss or management plan involves more than scaling back on a patient's existing diet.

NUTRITION NOTES

Feeding Strategies for Overweight and Obese Patients

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Overweight or obese dogs and cats manifest the most common forms of malnutrition and account for more than 50% of dogs and cats in the United States.¹ Animals with a body condition score (BCS) of 6/9 or 7/9 are considered overweight, and those with a BCS of 8/9 or 9/9 are considered obese.²

Managing overweight patients can be difficult for veterinarians; some of the more important but challenging steps include communicating about weight loss, determining what to feed, calculating calorie intake for the main diet in addition to treats and extras, and following up to ensure client compliance. This article provides guidance for selecting a proper diet for weight loss among the different types of diet options available for dogs and cats. It also provides mindful guidance for incorporating treat rewards during weight loss.

NUTRITION ASSESSMENT INSIGHTS

Nutrition assessment and a comprehensive diet history are integral parts of the physical examination and medical history. A nutrition assessment includes body weight, body condition score, and muscle condition score. Body weight and body condition score can be used together to help determine if a patient is

overweight and/or obese and to calculate the patient's estimated ideal body weight. The estimated ideal body weight can then be used to estimate energy requirements for weight loss.

BOX 1 Components of a Diet History

- Diet type, amount, and frequency
- Duration of feeding the main diet
- How the main diet is measured
- All treat types, amounts, and frequency
- Table scraps/human food amounts and frequency
- Food for medication administration
- Food for training
- Other pets' food
- Any other food or treats
- Dietary supplements
- Flavored medications
- Flavored toothpaste



A diet history provides information about what the patient is eating and includes substantially more than the main diet type and amount (**BOX 1**). This history also indicates how the patient is being fed. By gaining insight into the feeding methods, food preferences, and the client's feeding practices, a clinician can develop a weight loss plan tailored to the individual dog or cat. Developing an individualized weight-loss plan can also help improve client compliance. In the authors' clinical experience, providing treat options for bonding and training purposes or options for foods for medication administration helps set the client up for success. Although achieving weight loss will probably require changes to feeding methods and practices, even minimal shifts in current habits may result in improved compliance (**BOX 2**).

DIET SELECTION FOR WEIGHT-LOSS PLANS

A major part of developing a weight-loss plan is diet selection. Some clinicians and clients simply cut back the patient's current maintenance diet to reduce calorie intake. Although this practice is easy and appropriate for some patients, especially those being fed substantially more calories than needed, this approach could put patients at risk. Diet selection and the amount of restriction possible should be based on the nutrient density of each diet. Because diets contain protein, essential fatty acids, vitamins, minerals, and other nutrients in addition to calories, food intake restriction can also restrict these essential nutrients. As a result, severely restricting calories with a diet not intended for weight loss can result in undernutrition and, if continued long enough, lead to nutrient deficiencies.³⁻⁵

The nutrient concentrations of the diet should match what the patient needs so that it consumes adequate nutrients to meet its needs during weight loss and prevent nutritional deficiencies. Diet manufacturers often formulate weight-loss diets, including veterinary therapeutic diets (VTDs), specifically to be more nutrient dense to help compensate for more aggressive calorie restriction. These formulations translate to higher concentrations of nutrients per 100 or 1000 kcal to allow for increased nutrient intake at lower energy concentrations.

Multiple studies have estimated nutrient intake compared with the National Research Council (NRC) Nutrient Requirements of Dogs and Cats⁶ in both

theoretical and real-life settings.^{4,5,7,8} For patients that are in ideal body condition and consuming a maintenance quantity of food (i.e., not for weight loss), the NRC's calorie content basis requirement in grams or milligrams per 1000 kcal can be compared with the diet composition to ensure that nutrient requirements are being met.⁹ The Association of American Feed Control Officials (AAFCO) nutrient profiles¹⁰ contain recommendations for minimum nutrient concentrations in pet food and can also be a good source of information. When calorie intake must be reduced, it is more challenging to compare intake based on calorie content of the diet because the diet is being fed at a reduced energy level. During weight loss, a pet could be consuming a lower amount of nutrients because it is not eating as much food.

BOX 2 Practice Tips for Managing Overweight and Obese Pets

- Encourage conversations about weight and the risks to the patient's health.
- Obtain a thorough diet history, including human foods and treats.
- Have clients fill out a nutrition assessment form for an appointment. Sample forms can be found at
 - [wsava.org/global-guidelines/global-nutrition-guidelines](https://www.wsava.org/global-guidelines/global-nutrition-guidelines)
 - [acvn.org/nutrition-resources](https://www.acvn.org/nutrition-resources)
- Do not simply cut back on a patient's regular food amount and expect weight-loss success.
- Select diets that are formulated for weight loss (e.g., veterinary therapeutic diets).
- Provide specific feeding amount instructions tailored for the individual patients.
- Help select treats at 10% (less for some cases) of daily calories in your weight-management plan.
- Include in your weight-management plan a few ideas for fun and calorie-burning activities that clients can do with their pet.
- Provide frequent weight check-ins, encouragement, and alternatives for rewarding patients.
- Take "before and after" photos to help motivate clients to continue the weight-loss plan.

Studies estimating nutrient intake during weight loss show that meeting nutrient requirements with food intake restriction can be difficult, especially if the diet is not formulated to be more nutrient dense than a maintenance diet.^{4,5,7,8} Linder et al. created a theoretical overweight patient and estimated nutrient requirements at different energy levels with different diets: a commercially available high-energy diet, a commercially available maintenance diet, a commercially available weight-management diet, and 2 VTDs for weight loss.⁴ They found that nutrient requirements were more likely to be met by the VTDs for weight loss. Further food restriction also made nutrient deficiencies more pronounced.⁸ Therefore, when making a diet plan for an overweight or obese patient, it is useful to check with the diet manufacturer to determine if the diet is nutritionally designed for weight loss and to consult with a board-certified veterinary nutritionist (acvn.org) if severe restriction (e.g., less than 60% of resting energy requirement for ideal weight) is needed.² The NRC Nutrient Requirements also provide recommended allowances for nutrients based on metabolic body weight (AAFCO

does not), so calculations of potential deficiencies of individual nutrients can be based on the patient's weight and how much of the diet the patient is consuming per day.

Even among diets marketed for weight management, considerable variation exists. Diets labeled as “weight management,” “healthy weight,” “reduced calorie,” “light,” or “weight loss” are typically formulated to prevent weight gain in pets prone to being overweight but may not be intended for use in pets in which aggressive calorie restriction is needed for weight loss. Careful reading of labels and contacting the company may be needed to ensure that a given diet is appropriate for aggressive weight loss. As a general rule, if a pet owner needs to feed less than that recommended by the feeding directions, the pet may be at risk for deficiencies because companies assume that pets will be eating at least the recommended amount to meet their essential nutrient needs.

Although the weight-loss goal is to select a diet that is more nutrient dense than a maintenance diet, the

TABLE 1 Estimated Daily Treat Calories in Weight-Loss Plans

ESTIMATED IDEAL BODY WEIGHT		ESTIMATED CALORIES FOR WEIGHT LOSS*	CALORIES FROM WEIGHT-LOSS DIET	TREAT/REWARD ALLOWANCE
POUNDS	KILOGRAMS	DER/MER†	90% OF DAILY KCAL	10% OF DAILY KCAL
DOGS				
11	5	234	211	23
22	10	394	354	39
33	15	534	480	53
44	20	662	596	66
55	25	783	704	78
66	30	897	808	90
77	35	1007	907	101
88	40	1113	1002	111
99	45	1216	1095	122
110	50	1316	1185	132
CATS				
4	1.8	88	79	9
8	3.6	147	133	15
12	5.5	200	180	20
16	7.3	248	223	25
20	9.1	293	264	29

*Calories for weight loss may change by individual needs; adjust up or down accordingly, as needed.
 †Dogs are often started at resting energy requirement (RER) × 1; cats are often started at RER × 0.8 (i.e., 80% RER).
 DER=daily energy requirement; MER=maintenance energy requirement.



optimal nutrient density (or nutrient amount per calorie fed) is not known.⁴ For slightly overweight patients, commercially available maintenance diets may enable successful weight loss but carry a risk for nutrient deficiencies over time.^{3,4,7} For obese patients, or patients with concurrent health issues, a weight-loss plan involving more drastic calorie restriction and more time to achieve weight loss, with a specific weight-loss diet and careful patient monitoring, is often necessary to avoid potential complications associated with obesity and rapid weight loss.⁹

BENEFITS OF FEEDING A DIET DESIGNED FOR WEIGHT LOSS

In addition to increased nutrient density, diets formulated for weight loss, including VTDs, offer the following additional benefits for overweight and obese patients:

- Increased dietary protein and indispensable amino acids help maintain lean body mass.
- Different types of dietary fiber help increase satiety or the feeling of fullness.
- Reduced calorie density enables feeding of higher volumes of food despite calorie restriction.
- The additional nutrients, including but not limited to L-carnitine, eicosapentaenoic acid, and docosahexaenoic acid, could be beneficial for weight loss of overweight patients.

FEEDING HEALTHY TREATS DURING WEIGHT LOSS

For increased compliance with the weight-loss plan, treats should be included in the plan. Feeding treats improves the human-animal bond, minimizes begging, and may help reduce clients' angst about reducing the amount of food they feed their pet or changing their pet's diet. It is commonly said that calories from treats and calories from other extras (e.g., foods for medication administration) should not make up more than 10% of total daily calories.¹¹ Thus, although at least 90% of calories should come from complete and balanced foods, up to 10% of calories each day may come from treats or other pet-safe household foods. Treats can include commercial treats or pet-safe human foods (e.g., fruits or vegetables) that are not complete and balanced but offer high value rewards to maintain training routines and the human-animal bond.¹²

An exception to the treat allowance applies to patients undergoing severe calorie restriction for weight loss. To

ensure adequate nutrient intake for those patients, it may be beneficial to limit foods that are not complete and balanced to 5% or fewer of total calories.

TABLE 1 shows the calculated total energy requirements for weight loss, with a breakdown of the recommended maximum treat allowance and adjusted calorie estimates from the selected diet. The calorie content of dog and cat treats can be found in the calorie content statement on a label, as well as by visiting the manufacturer's website or contacting the manufacturer directly. Remember, if you adjust the recommended number of calories up or down, also adjust for treats so as not to thwart weight-loss efforts and nutrient intake.

TAKE-HOME POINTS

- To prevent unintended nutrient deficiencies and allow the patient to lose weight safely, recommend a diet formulated for weight loss (e.g., a VTD) that is appropriate for the severity of obesity.
- Select an ideal diet for an overweight or obese patient according to the patient's nutrition assessment, including body condition score, medical needs (e.g., low sodium for heart disease), degree of caloric restriction needed for weight loss, and client preferences (e.g., canned versus dry food).
- To help improve compliance, incorporate treats into the weight-loss plan, but not in excess.
- Motivate and encourage clients to continue the weight-loss program and thus add more healthy years to their pet's life.
- As part of the weight-loss journey, invite pet owners to visit your clinic at least every 2 weeks to weigh their pets. **TVP**

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Disclosure

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All authors are representative members of the Pet Food Institute's (PFI) Nutrition Subcommittee. The PFI is the national trade association representing U.S. dog and cat food makers. Its members represent the vast majority of pet food produced in the United States.

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