

Safe Weight Reduction in an Obese Diabetic Cat

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A 14-year-old, castrated male Maine coon cat presented to the clinical nutrition service for assistance with weight loss. His current weight was 23 pounds (10.5 kg); body condition score was 9/9.

He had been a stable diabetic for 3 years on 6 units lente insulin twice a day. The cat's current diet was a combination of Hill's r/d dry and Royal Canin Calorie Control pouches. He had been fed restricted amounts of these diets for 4 months with no change in weight or insulin requirements. His total current intake had been accurately measured at 200 kcal per day. The owner reported that the cat appeared to prefer dry food—she was concerned about the cat's dietary preference because he had had hepatic lipidosis at 5 years of age. He also had a history of repeated urinary tract obstruction leading to perineal urethrostomy surgery and persistent struvite crystalluria.



ASK YOURSELF ...

Which of the following nutritional goals is the *least* important consideration for this cat?

- A. Reliable, predictable intake of a consistent food
- B. Controlled weight loss not to exceed 1% of body weight per week
- C. Preservation of lean body mass, while promoting loss of body fat
- D. Blood glucose control during weight loss
- E. Feeding a diet formulated to reduce struvite crystal formation

continues

INSIGHTS FROM CLINICAL CASES . DISCUSSION

Correct Answer: E Feeding a diet formulated to reduce struvite crystal formation

Although reducing crystal formation would be part of an ideal scenario, such reduction can probably be achieved by increasing water intake through feeding some canned food as part of the overall nutritional plan. The cat has already had perineal urethrostomy surgery, so urinary tract obstruction is a minor consideration. Urinalysis must be done at this and subsequent visits to monitor crystalluria and to screen for occult urinary tract infection.

In planning a weight loss program, aim for a conservative estimate of “ideal” body weight to avoid excessive restriction of calories. Extremely rapid weight loss in cats may result in hepatic lipidosis or protein deficiency. Do not exceed 1% body weight loss per week. During weight loss, adequate protein level in the diet is important for maintaining lean body mass and helps to control diabetes and prevent hepatic lipidosis. Even stable diabetics may have diabetic remission as a result of weight loss and/or a change to a high-protein, low-carbohydrate diet; therefore, clinical signs and blood glucose must be closely monitored during weight loss.

The target weight for this cat was conservatively estimated at 14 pounds (6.4 kg). This gives an estimated daily energy requirement for weight loss of 210 kcal per day using the factor of $0.8 \times$ resting energy requirement.

$$\text{RER} = 30[\text{ideal bw in kg}] + 70$$

However, the diet history revealed that he was already consuming fewer calories than these calculations yielded. Therefore, the recommend-

ed daily energy intake was 80% of current intake, or 160 kcal per day.

Ideally, this cat should eat 2 grams of protein per pound of lean (optimal) body weight (28 g) during weight loss to preserve lean body mass and to meet daily protein requirements. Thus, a high-protein, low-carbohydrate diet should be selected to manage both weight loss and diabetes. Options are listed in **Table 1**. In this case, a combination of dry and canned foods was considered optimal. The dry portion of the diet was fed in a Play-N-Treat feeding ball (OurPet's Company, www.our-pets.com.) to increase his activity level. Urine glucose was monitored using a detection system for litter (Glucotest, www.purinavets.com). Diabetic remission occurred when he reached 18.9 pounds (8.6 kg). Activity level and quality-of-life indicators continued to improve. At his 16-month recheck, he weighed 14.2 pounds (6.5 kg) and had a body condition score of 5/9. ■



Whiskey at 14 pounds; body condition score 5/9

See Aids & Resources, back page, for references, contacts, and appendices.

Table 1. Diet Options for Weight

FOOD

Purina Veterinary Diets® OM Feline Formula (dry)

Purina Veterinary Diets® OM Feline Formula (canned)

Hill's Prescription Diet® Feline r/d® (dry)

Hill's Prescription Diet® Feline r/d® (canned)

Royal Canin Veterinary Diet™ Feline Calorie Control CC 38™ (dry)

Royal Canin Veterinary Diet™ Feline Calorie Control CC™ in Gel (canned)

Royal Canin Veterinary Diet™ Feline Calorie Control CC™ in Gravy Pouch

Royal Canin Veterinary Diet™/MC Feline Diabetic DS 44™/MC (dry)

Eukanuba Veterinary Diets Restricted-Calorie™/Feline Dry Formula

Eukanuba Veterinary Diets Restricted-Calorie™/Feline Canned Formula

Eukanuba Veterinary Diets Optimum Weight Control™/Feline Dry Formula

Hill's Prescription Diet® Feline m/d® (canned)

Hill's Prescription Diet® Feline m/d® (dry)

Purina Veterinary Diets® DM Feline Formula (canned)

Purina Veterinary Diets® DM Feline Formula (dry)

* Current as of May 2006 ME = metabolizable energy

bw = body weight; RER = resting energy requirement

Loss in a Diabetic Cat*

CALORIC CONTENT (ME)	PROTEIN		FAT (% kcal ME)	CARBOHYDRATE (% kcal ME)
	(g/100 kcal ME)	(% kcal ME)		
321 kcal/cup	16.5	56.2	20.5	23.3
150 kcal/can (156 g can)	11.4	43.1	34.4	22.4
263 kcal/cup	11.1	40	24	36
116 kcal/can (156 g can)	11.4	38	25	27
222 kcal/cup	11.9	45.8	22.9	32.1
130 kcal/can (165 g can)	11.4	45.4	46.5	8.1
66 kcal/pouch (85 g pouch)	11.0	43.9	36	20.1
247 kcal/cup	12.3	47.5	27.9	24.6
277 kcal/cup	9.4	34	23	43
204 kcal/cup (170 g can)	9.5	40	41	19
357 kcal/cup	9.7	37	29	34
156 kcal/can (156 g can)	13.1	46	41	14
480 kcal/cup	12.3	43	44	13
194 kcal/can (156 g can)	11.9	46.3	47.1	6.6
592 kcal/cup	12.9	49.7	37.4	12.9



at a glance

Steps in formulating a weight loss plan for a diabetic cat:

1. Make conservative estimate of "ideal" body weight.
2. Calculate energy dose using either 80% of the current *measured* intake or the formula $0.8 \times \text{RER}$ at ideal weight.
 $\text{RER} = 30[\text{ideal bw in kg}] + 70$
3. Assess need for diet change. Select high-protein diet and diet form (dry or canned).
4. Ensure that diet selected will provide close to 2 g protein per pound of body weight at ideal weight.
5. Closely monitor diabetes and progress of weight loss; reassess diet plan.

TAKE-HOME MESSAGES

- Many severely obese cats require surprisingly few calories for maintenance, so weight loss recommendations must be individualized.
- Be sure to provide adequate protein while restricting energy intake.
- Both weight loss and diabetes control must be closely monitored during a weight loss program.
- Expect changing insulin requirements as diabetic cats lose weight.