

## **Tricks or Treats: A Veterinary Behaviorist's Approach to Weight Management in Pet Dogs and Cats**

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Problems faced by Veterinary Behaviorists in practice-

### 1. Anorexia -

First we investigate whether the dog is truly anorexic or not, or if this is a perception problem of "not being food motivated".

1.1. This can be done by measuring the amount of food offered each day and comparing it to how much the dog eats in that 24 hour period. Often with free feeding, the animal is not necessarily anorexic, but rather grazing throughout the day and the owner does not have a specific routine to fill the bowl, only when they notice it is empty.

1.2. We then recommend meal feeding. Offer the patient a measured amount of food in the bowl and allow them to eat. After 20-30 minutes, call the patient away, then pick up the bowl and any remaining food. Another meal of a measured amount can be offered again that evening, repeating the same process. It usually takes the patient ~ 2-3 days to adjust to this schedule.

Now we know exactly what the patient is eating and when. And we can take advantage of timing for training exercises, recommending clients not try to do training sessions immediately after meal time.

### 1.3. Reasons for the patient being reported to "not be food motivated"

There are several reasons for this, which we will investigate after we have given the referring veterinarian the right of first refusal.

1.3.1. These include medical causes that include nausea. This is considered especially if the patient has other signs of GI disease such as inconsistent stools, borborygmus, eructation, excess flatulence, and oral related abnormal repetitive behaviors such as fly snapping, star gazing, air licking, object licking or even some types of self licking.

If primary GI disease is suspected, differentials are worked up as part of the patient's diagnostic plan. Any medications that the patient is receiving are also investigated as potential causes of decreased appetite. [Dr. Seksel's lectures will go into more detail about medications and decreased motivation for food.]

1.4. We also investigate exactly what the family is feeding the dog and where. Sometimes it is a palatability problem.

1.4.1. In those cases, we discuss changing to a food type that is more appealing to the dog but still nutritionally balanced and affordable, or discuss how to use additives and toppers. With toppers, if a dog will not eat their meal when offered, the bowl is not picked up, topper added, and immediately offered again, but rather taken up at the end of the 20-30 minute period. Then at the next meal, the topper is added before offering the food to the dog. This helps to prevent

the dog learning that if they don't eat what is initially offered, they will be given something more palatable.

1.4.2. If the patient is also generally anxious in the home environment, or is fearful of the environment in which it is fed, this can also negatively impact motivation to eat. Sometimes this can manifest as the patient taking a mouthful of food and moving to a different area to eat it. We ask where the food is being offered and who or what is around at the time of meals. Are there kids playing loudly in the same room? Is there another dog in the home that is threatening the patient over food? Is the patient afraid of confinement and being offered meals only in a crate? If so, we take steps to modify the environment to help reduce the intensity of those fear triggers, perhaps increase the value of the food (toppers) and this may also impact our medication choices when addressing the patient's anxiety.

1.5. Another behavioral cause of anorexia is owner interference. Some owners have their own level of anxiety over whether the patient is eating or not. This might come from previous history with another pet, their own personal trauma around food, or when trying to nurse a patient back to health after a medical problem. Typically this manifests as the owner intensely trying to coax the patient to eat when meals are offered.

1.5.1. However, the social pressure being placed on the patient is so great that it actually creates an environment of distress and conflict around meals.

1.5.2. A 5 year old FeS Golden Retriever had exploratory surgery for a foreign body. Upon release from the hospital, the owners were very concerned about her eating after having her stomach and intestines cut open. They laid a plush blanket on the floor, sat down next to her, petted her, talked to her, and coaxed and cajoled her to take each bite. A few days after discharge, the patient was not eating more than a few bites each meal. The owners were very concerned. Medical evaluation showed no abnormalities and her surgical site was healing well with minimal abdominal discomfort. When a few meatballs of a GI diet was offered in a bowl in hospital by the staff, the dog ate readily. In this case, behavior modification was prescribed, but more for the owners than the dog. They were instructed to go back to their previous meal routine, and to go sit in an adjacent room and read a magazine or work on their email. They were to set a timer for 20-30 minutes and advised to completely ignore the dog until the timer went off, and stay engaged in their activity. After the timer rang, they could then go in to see what she had eaten, and pick up any remaining meal. After 2 days, the dog was eating normally again.

1.6. Not treat motivated - value, timing, anxiety

We will often be told by clients that the patient will eat their food well but is not "treat motivated." In a majority of cases this is due to two reasons-

1.6.1. The treat offered is not very high value or palatable (think plain milk bone), and they are trying to train or perform behavior modification in an environment with distractions or triggers.

1.6.2. The patient is anxious in that setting. This is most common when the owner reports that the patient will eat that specific treat at home willingly, but will not take it during training, or on walks when faced with frightening triggers, or even at the veterinary office. This tells us that the patient is too fearful or anxious in that situation to be able to think about food. There is no starting point for classical (Pavlovian) conditioning. The intensity of the stimulus is too high for that patient to be able to learn anything positively in that setting. The environment must be

addressed- increase distance away from the trigger, reduce the number of triggers in the environment, and/or behavioral medications are needed to help reduce anxiety enough to have a realistic starting point to learn something is less frightening.

2. On the opposite side of anorexia is polyphagia. This is also a common problem veterinary behaviorists encounter. Common behaviors associated with include stealing food and counter surfing, increased possessive aggression, and overarousal during training.

2.1. With stealing food, environmental management is an absolute requirement. If the food is available for the patient to get, even rarely, the behavior will persist. The patient is rewarded for the behavior of looking for and stealing food with a very high value and highly palatable food on an intermittent reinforcement schedule. This is a recipe for a very strong behavior that is resistant to extinction. I use the analogy of gambling with a slot machine. We keep playing, over and over and over, because sometimes, rarely, we are reinforced with a very high value reward. The treatment plan then consists of ensuring that all potentially edible items are put out of reach and out of access to the patient, or the patient is in a safe secure area when food is being prepared or eaten. Sometimes this means trash cans are put in the garage or pantry, and childproof locks are placed on cabinet doors.

2.2. When a patient presents with possessive aggression or food guarding, we first investigate how much the patient is being fed, how often, and whether they are eating it. If they are being fed and are eating an appropriate amount at appropriate intervals, we may be dealing with true polyphagia and the food guarding is managed similarly to those patients with food stealing.

2.2.1. However, if the patient is being offered food but not eating it and then guarding it, it is important to investigate medical causes of acute hyporexia and nausea that may lead to the patient not wanting to eat normally but still experiencing hunger.

2.2.2. A 9 month old intact male american shelter dog began to display signs of food guarding while in the shelter. His environment and housing had not changed. His food was the same before and after presentation. His stools initially were normal, but then became slightly soft. At one point, an astute caregiver noted that there might be something that looked like tennis ball fuzz in some of his feces. A medical evaluation was performed and it was determined that he had ingested part of a tennis ball. He underwent an enterotomy to remove it, and upon recovery and resuming meals, his food guarding had resolved.

2.3. With overarousal during training, owners will frequently report that the patient snatches treats, takes them hard, or hyperfocuses on the treat and is unable to learn even simple behaviors because they ignore other environmental or social input while only focusing on the treat. This can be addressed by ensuring that the hyperfocus is not part of another anxiety disorder, and if so, treating that accordingly. Additionally, although we generally recommend that clients do not train right after a meal, in these cases, that timing can actually be helpful. Satiety after the meal can help reduce the motivation for the treats, so that the patient is better able to focus on the information surrounding the training session rather than solely on the treats. Also, the value and palatability of the treats can be reduced. For example, we might recommend using cheerios or thinly sliced carrot discs, or even frozen peas as training treats.

3. Sometimes we will have a patient presented to us with a low body condition score (BCS) despite good appetite and seemingly appropriate caloric offerings.

3.1. There are medical factors that should be investigated such as EPI or maldigestion/ malabsorption disease. However, behavioral factors can also play a role.

3.1.1. One area we investigate is the activity level of the patient. Especially for hypervigilant patients or those performing locomotor abnormal repetitive behaviors (ARB), they are moving so much due to their behavior problem that they are burning through calories faster than they can take in. I see this often in shelter dogs who perform ARBs due to acute conflict and displacement behaviors or kennel stress. Compulsive disorders and hyperactivity syndromes such as hyperkinesis/ Hypersensitivity Hyperactivity Syndrome can also result in this. Increased calorie intake and treatment of the underlying behavior problem are standard.

3.2. Environmental and social factors can also play a role.

3.2.1. We investigate exactly how much of what the pet is being offered. For example, are they being offered too small amounts of food to meet their caloric needs? Who is responsible for meals? Are they being offered consistently?

3.2.2. Sparky was a patient who came to see us for stranger directed aggression. The family consisted of two adults and two boys. Three of the four family members reported to be neurodivergent, and consistency and routine were challenging individually and as a family. We discovered that often the family would get side tracked or distracted and forget to give Sparky meals. Her BCS at the time of initial consult was 3.5/9. One part of their initial treatment plan included making a chart for Sparky's daily needs- including outside breaks to eliminate, two meals a day, and short training sessions to teach the foundational behaviors she needed for behavior modification.

4. Sometimes we encounter the problem of extensive dietary restrictions for patients. This could be a result of a diagnosed or suspected food sensitivity or some owner preferences. This restriction prevents use of standard treats for training and behavior modification.

4.1. When this occurs, brainstorming and troubleshooting commence. We have open dialogue with the client about what is off limits, and then investigate what food sources can be used. Sometimes we can find appropriate commercially available treat options, such as some formulations of Fruitables. Other times, we must use human grade single ingredient options or the diet itself.

4.1.1. Once we've identified a source, we discuss how to make it useable for treats. For example, vegetables can be used but must be cut into appropriately sized pieces. Perhaps chicken broth or yogurt is appropriate- these can be frozen in reusable silicone pouches or made into "pupcicles" or "pup cups" which are then used for reinforcement, one lick at a time. This can also be used in hospital when trying to use counter conditioning during fear free handling in patients fasted for anesthesia or sedation. A small amount of frozen chicken broth can be offered in licks to prevent too much volume ingestion while still being able to pair something pleasant with the experience.

4.1.2. For those dogs on elimination diet trials, we will often discuss with the clinician supervising the trial what treat options they are comfortable with during the trial. Sometimes we can use vegan mini-marshmallows, or make tiny meatballs out of a canned formulation. And in some cases, our only option is to use the ingredient restricted kibble.

4.1.3. However, recently many of the foods used for elimination diet trials have been much more palatable than they previously were.

A few of my colleagues will also make 'hypoallergenic "peanut butter" using canned Feline HA mixed with a small amount of honey until it is the consistency of peanut butter.

Another option recently discussed is to put a small amount of liquid smoke on a cotton ball and enclose it in a container of the hypoallergenic kibble, without the two touching. After some time in the same container, the food takes on the flavor of the liquid smoke, giving it a more BBQ flavor without introducing off-limit ingredients.

5. Overweight or obese patients, identified by higher BCS, are also a common problem we encounter. These are generally due to a combination of improper calorie management and decreased movement or activity. However, endocrine diseases that can lead to increased weight such as hypothyroidism and Cushing's disease need to be considered.

5.1. The common perception in veterinary medicine is that behavior treatment disregards weight management and that giving treats using positive reinforcement makes pets fat.

Yes, we recommend using consistent and predictable interactions that result in positive reinforcement for the patient. A majority of our patients are given a food reward for these interactions. In application, this could lead to over-conditioning due to excess calorie intake.

5.1.1. However, for all patients, we always include a short statement about food, treats, and caloric intake on their home care plan. It reads as follows- Ideally, no more than 5-10% of your pet's caloric intake should come from treats. You can always use a portion of your pet's food for training. We are happy to give recommendations for treat options upon request.

5.1.2. In addition to this, we routinely give specific recommendations regarding what treats to use, how to make them appropriately sized, and if needed, offer calorie guidance for weight management or weight loss. Treats should be tiny- no larger than my pinkie finger nail or the size of a pea (smaller for small dogs). If there are specific treats the dog likes and the owner wants to use, we discuss how to make it more appropriate. For example a hotdog- it should be cut lengthwise, then lengthwise again (now in 4 long parts) and then diced so that ~ 80 pieces result from one hotdog. One training session should consist of ~ 20-30 treats.

5.1.3. Henry is a good example of one of our patients. He is a 3 year old male neutered Springer Spaniel/ Poodle mix weighing 26 kg, with a BCS of 7/9. He was presented for owner directed aggression, particularly over taking away stolen items, handling, moving him, crating him and leashing him. He also was an expert level counter surfer. In addition to environmental management and targeted treatment for his aggression, we gave specific instructions for dietary management, including calorie intake and treat options.

**In order to help Henry lose weight, please feed him no more than 665 calories per day. This is the total calories per day made up of his kibble, frozen green beans and treats.**

5.1.4. We use the same calculations that our Small Animal Primary Care service uses, which was developed and refined in collaboration with a board certified veterinary nutritionist. (See below)

Step 1: Determine current body weight in kg and current body condition score (BCS) on a 9 point scale, where 5 is ideal BCS

Step 2: Calculate **ideal body weight (IBW)** and DER using table and Assumption #1

Assumption #1: Each BCS unit change = 10% change in body fat (BF)

Calculations:

- a. Current BCS- Desired BCS = "X" units
- b. "X" units x 10% = % **excess fat mass (%EFM)**
- c. Current BW x %EFM = kg **EFM**
- d. Current BWkg - **EFM** = **IBW**
- e.  $RER_{IBW} = (IBW_{kg})^{0.75} \times 70 = \text{kcal ME/ day}$
- f.  $DER_{IBW} = RER_{IBW} \times 1.0 \text{ dogs or } RER_{IBW} \times 0.8 \text{ (cat)}$

Step 3: Determine daily food amount by:

$$DER_{IBW} \div \text{kcal of food unit} = \text{Units of food/ day}$$

RER= Resting Energy Requirement

DER= Daily Energy Requirement

Example: Dog weighs 24.1 kg and its BCS is 8 out of 9:

- a.  $8-5=3$
- b.  $3 \times 10\% = 30\%$  **EFM**
- c.  $24.1\text{kg} \times 30\%=7.23 \text{ kg}$
- d.  $24.1\text{kg} - 7.23\text{kg} =16.87\text{kg}$  is **IBW**
- e.  $RER = 16.87\text{kg}^{0.75} \times 70 = 8.32 \times 70 = 582 \text{ kcal ME/ day}$
- f.  $DER = 582 \text{ kcal} \times 1= 582 \text{ kcal/ cup}$

6. Conclusion:

Finally, regardless of the calorie intake concern, the patient should be regularly monitored for weight changes, and the treatment recommendations, whether for the primary underlying behavior concern or for caloric intake should be adjusted accordingly. For these patients, i recommend monthly check ins for at least body weight, BCS, and interest level in food for meals and for treats. No treatment plan is complete without a follow up plan.