

LARGEST WEIGHT LOSS STUDY IN DOGS TO DATE

Key Points

- Most canine weight loss studies are small in scope, involving a single centre and single locality
- Royal Canin have conducted the largest weight loss study to date, in a range of primary care practices from diverse locations
- Feeding dogs weight-management diets (ROYAL CANIN® SATIETY Veterinary Diet) was associated with significant weight loss; 896/926 (97%) dogs lost weight during the 3-month study
- In addition, owners observed significantly increased activity and quality of life (QOL), and controlled or decreased food-seeking (begging) behaviour

SUCCESS OF A WEIGHT LOSS PLAN FOR OVERWEIGHT DOGS: THE RESULTS OF AN INTERNATIONAL WEIGHT LOSS STUDY

Flanagan J, Bissot T, Hours M-A, Moreno B, Feugier A, German AJ. *PLoS ONE* (2017);12(9):e0184199

Purpose

To determine the efficacy of a dietary weight loss intervention that promotes SATIETY in overweight dogs, and to establish the impact of weight loss on owner perceptions of activity, begging behaviour and QOL.

Design

A 3-month prospective observational open-label cohort study of weight loss in 926 overweight dogs was conducted at 340 veterinary practices in 27 countries.

Eligibility criteria

Dogs were considered for inclusion in the study if they had a body condition score (BCS) $\geq 7/9$, were of adult age and in good health. Other eligibility criteria included dogs not requiring a therapeutic diet (other than weight loss diet) and not having significant concurrent disease (e.g. hypothyroidism, diabetes mellitus, chronic kidney disease etc.). Female dogs could not be pregnant or lactating. Concurrent therapy with drugs that could influence the weight loss process (e.g. glucocorticoids, anticonvulsants, appetite stimulants, antibacterials, insulin) was not allowed.

Diet

Owners could choose whether to offer dry food exclusively, wet food exclusively, or a mix of both. Dogs were fed high-protein high-fibre weight loss diets from Royal Canin: SATIETY Weight Management dry food (DF 1); SATIETY Small Dog dry food (DF 2); or SATIETY Wet (WF).

Measurements

Body condition was determined using a 9-point BCS system. Training was provided in assessing BCS. All dogs were weighed at their veterinary practice on electronic scales designed for

the purpose. The same set of scales was always used for the same dog during its weight loss programme. Activity, QOL and begging behaviour were subjectively scored by the veterinarian after discussion with the owner. The same veterinarian always performed scores in the same dog.

Weight loss protocol

At the first visit dogs were examined, weighed and assessed for BCS, activity, QOL and begging behaviour. Target body weight (TBW) was estimated by dividing each dog's current body weight by a factor that took into account the estimated percentage of excess weight (assumed to be 10% per unit of BCS between 5 and 9). The initial daily energy allocation was 60-80 kcal/kg TBW^{0.75} depending on sex and neuter status. All TBW and energy allocations were calculated using an internet-based computer programme specifically developed for the trial. Owners were instructed to divide the calculated daily ration into at least two daily meals. All owners were counselled about not giving extra food (e.g. table scraps and treats). Four follow-up visits were scheduled for 2, 4, 8 and 12 weeks. At these visits dogs were weighed, assessments of activity, QOL and begging behaviour were recorded, and compliance with the weight loss programme was discussed with the owner. At each visit, adjustments were made to the feeding plan to aim for a weekly weight loss of between 1% and 3% per week.

Results

A total of 926 dogs completed the study, 568 (61%) of which were female (433 neutered) and 358 dogs (39%) were male (238 neutered). The dogs comprised 82 different breeds. The median age was 74 months (12-193 months). Median starting body weight was 23.2 kg (2.1-80.0 kg) and median BCS was 8 (7-9). Of the 926 study dogs, 601 (65%) were fed DF1 exclusively, 149 (16%) were fed DF2, 170 (18%) were fed a mix of WF and DF and 6 (1%) were fed WF exclusively. A subset of 437 dogs that complied the most with the visit schedule was identified to perform comparative analysis.

Weight loss outcomes

Weight loss occurred in 96.8% of dogs (896/926); 14 (1.5%) maintained a stable weight ($\pm 1\%$ of start weight); and 16 (1.7%)

gained $>1\%$ weight. A total of 896 (96.8%), 814 (87.9%), 543 (58.6%) and 78 (8.4%) dogs lost more than 1%, 5%, 10% and 20% of their start body weight, respectively.

Activity, QOL and begging behaviour

Activity increased significantly during the study ($p < 0.001$) and post-hoc analysis revealed significantly improved activity for weeks 2, 4, 8 and 12, compared with baseline (Figure 1). QOL increased significantly during the study ($p < 0.001$), with post-hoc analysis revealing significantly improved QOL for weeks 4, 8 and 12, compared with baseline. Begging behaviour decreased significantly during the study ($p < 0.001$), with post-hoc analysis revealing that begging behaviour improved for weeks 2, 4, 8 and 12, compared with baseline (Figure 2).

Conclusion and clinical relevance

This is the largest weight loss study in overweight dogs to date. It was conducted in the real world setting, at a large number of veterinary practices in diverse locations. The overwhelmingly positive results provide evidence that most overweight dogs lose

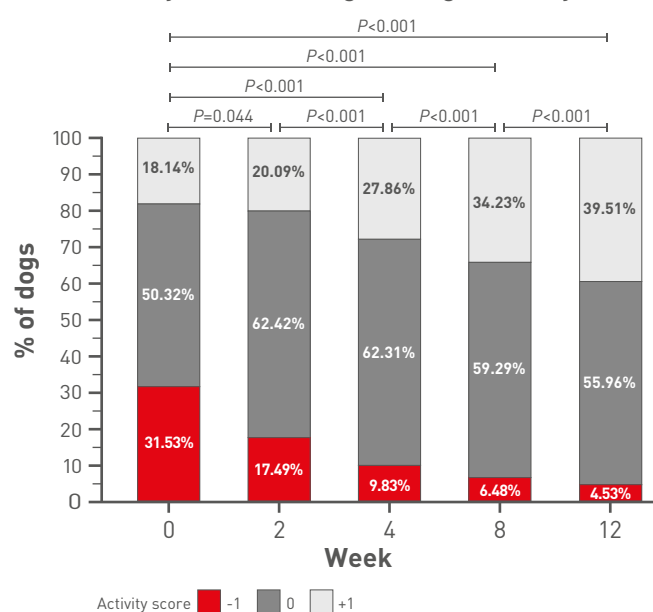
a clinically significant amount of weight when fed SATIETY as part of a dietary weight loss intervention. At the same time owners observed positive behavioural changes, with increased activity levels, improved QOL and decreased begging behaviour.

Nutritional recommendation

You can confidently recommend the proven nutrition of high-fibre, high-protein ROYAL CANIN® SATIETY Veterinary Diet for overweight dogs.

For best results, SATIETY should be fed consistently as the exclusive food for dogs to lose weight and maintain weight loss once their TBW is reached.

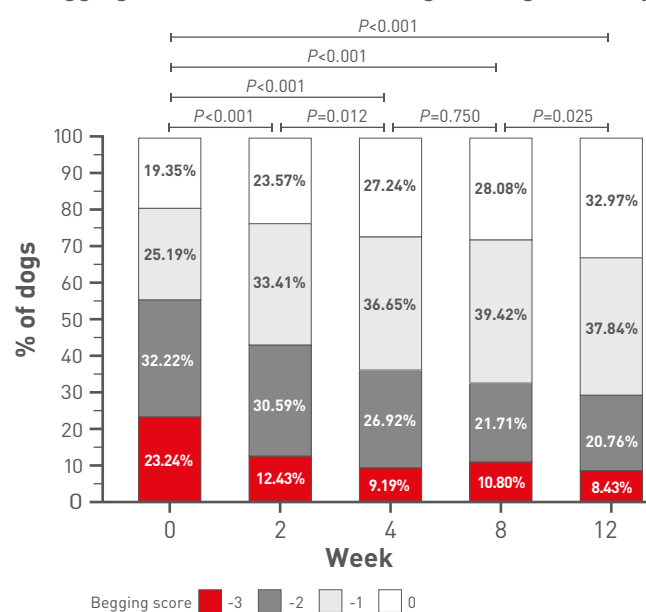
Figure 1:
Activity scores for dogs during the study



Activity scores for dogs during the study.

At each week, blocks with different colours represent the proportion of dogs assigned an activity score of -1 (not active), 0 (normal activity) and 1 (very active), respectively.

Figure 2:
Begging behaviour scores for dogs during the study



Food-seeking behaviour scores for dogs during the study.

At each week, blocks with different colours represent the proportion of dogs assigned a food-seeking behaviour score of 0 (only right before the meal), -1 (occasionally between meals), -2 (often between meals and right after meals), -3 (constantly between meals and right after meals) respectively.