



SCIENCE BEHIND SATIETY

ROYAL CANIN VETERINARY DIETS® SATIETY®

The weight management diets backed-up
with the most scientific evidence

Peer-reviewed field studies, performed
with the collaboration of Royal Canin
Weight Management Clinic (University
of Liverpool, UK), have shown that
ROYAL CANIN® SATIETY®:

- > induce **successful and safe weight loss**
- > promote satiety, **reducing voluntary energy intake and begging behaviour**
- > preserve **lean body mass** during weight loss
- > maintain **stable body weight** after weight loss
- > improve **quality of life**



INCREDIBLE IN EVERY DETAIL

ROYAL CANIN® SATIETY® WAS SHOWN TO IMPROVE THE OUTCOMES OF WEIGHT LOSS

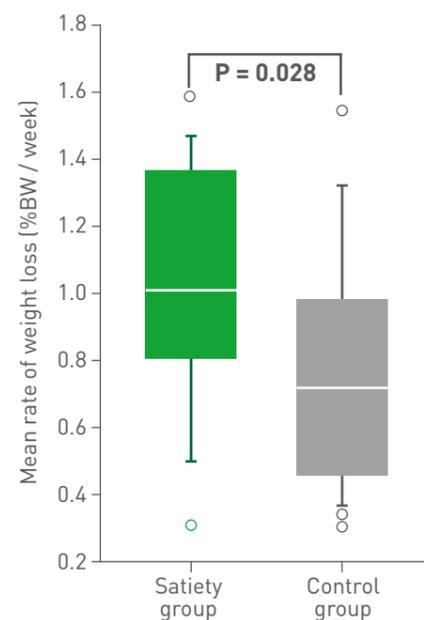
Specifically formulated weight loss diets are recommended to achieve safe weight loss in pets, but the high protein, high fibre nutritional strategy has shown the best efficacy.

A 2010 study⁽¹⁾, conducted at the Royal Canin Weight Management Clinic (University of Liverpool) compared two nutritional strategies and their performance during weight loss in 42 client-owned dogs with naturally occurring obesity:

- > A high protein, high fibre diet (ROYAL CANIN® SATIETY®); n=15
- > A high protein, medium fibre diet (Control diet); n=27

Baseline characteristics (signalment, percentage of overweight, and body fat percentage) were not significantly different between the two groups. The weight loss regimen was the same between the two groups. However, the percentage of weight loss was greater and the mean rate of weight loss faster with SATIETY® than with Obesity Management®. The percentage of decrease in body fat mass (measured by dual-energy X-ray absorptiometry) was also greater in dogs fed Satiety®.

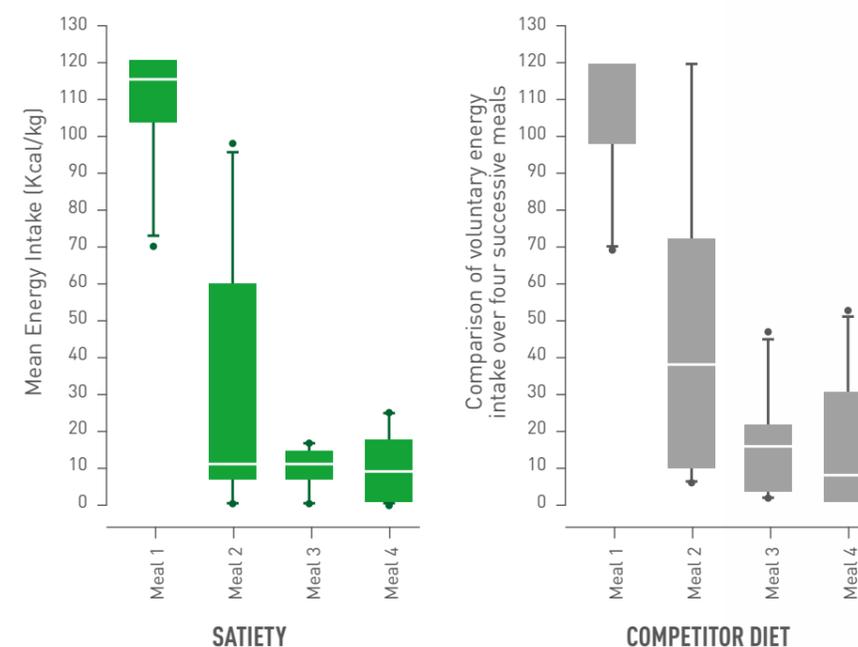
At a larger scale, a 3-month prospective cohort study conducted at 340 veterinary practices in 27 countries confirmed the efficacy of weight loss interventions using ROYAL CANIN® SATIETY® diets, involving 926 dogs and 413 cats. Over the course of the study, weight loss was achieved in 97% of dogs and cats, which lost on average 11.4% and 10.6% body weight, respectively^(2,3).



ROYAL CANIN® SATIETY® WAS SHOWN TO CONTROL BEGGING BEHAVIOUR DURING WEIGHT LOSS AND TO REDUCE VOLUNTARY ENERGY INTAKE

In cats and dogs, the effect of ROYAL CANIN® SATIETY® diets in reducing voluntary energy intake was assessed through several comparative studies with commercially available diets formulated for weight loss and mainly differing in their protein and fibre contents^(4,5).

The relative performance of SATIETY® and competitor diets was assessed in groups of healthy dogs and cats offered food ad libitum (or semi ad libitum for dogs that were offered food in 4 successive meals) over 5 consecutive days. Amongst the tested diets, the best satiating effect was obtained with ROYAL CANIN® SATIETY®, with significantly lower energy intake compared to competitor diets (17% and 28% less energy consumed on average in cats and dogs, respectively). This superior effect was not observed at the expense of palatability, as shown with associated palatability studies comparing the consumption of the same diets when offered side by side.



This satiating effect observed in a controlled environment was confirmed in obese pets undergoing weight loss. In a 3-month weight loss field trial in 413 cats and 926 dogs^(2,3), a significant improvement of begging behaviour and frequency was perceived by the owners over the course of the study, despite calorie restriction. On an individual perspective, at the end of the study 82% of cat-owners and 83% of dog-owners considered that the begging behaviour of their pets was stable or even reduced compared to baseline.



ROYAL CANIN® SATIETY® WAS SHOWN TO MINIMISE THE LOSS OF LEAN BODY MASS DURING WEIGHT LOSS

When losing weight, the primary objective is to lose body fat while preserving lean body mass. A high protein intake may result in an increased availability of amino acids for protein synthesis and the maintenance of the muscular mass. The protein concentration of low calorie diets must be greater than those of maintenance foods to provide the essential amino acids while restricting the energy intake.

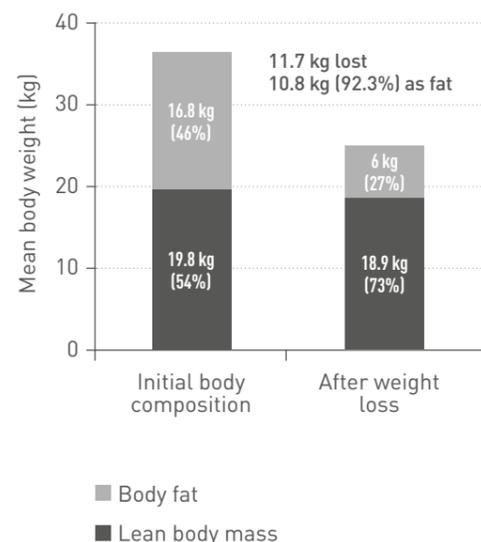
Results from several studies in cats and dogs have suggested that a higher protein/calorie ratio has positive effects on the preservation of lean body mass during weight loss.

Clinical weight loss trials in cats and dogs fed ROYAL CANIN® SATIETY® have shown that the weight was mostly lost in the form of fat mass and that lean body mass loss was minimal.

In a study performed in 2010, at the Royal Canin Weight Management Clinic⁽¹⁾, 15 client-owned obese dogs underwent a weight loss programme with Satiety Canine in which body composition was measured at the beginning of the trial and after successful weight loss, using the gold standard technique of dual-energy X ray absorptiometry (DEXA). The analysis of body composition results showed that most of the body weight lost (92.3%) was composed of body fat. More recently, body composition was assessed before and after weight loss in 18 client-owned cats fed ROYAL CANIN® SATIETY® Feline⁽⁶⁾. The results showed that the loss of lean body mass only amounted to about 6%.



Mean body composition of dogs before and after losing weight with Satiety® (DEXA scan)



ROYAL CANIN® SATIETY® WAS SHOWN TO LIMIT WEIGHT REBOUND AFTER WEIGHT LOSS

Once its target bodyweight is reached, the pet enters a critical weight stabilisation phase, and weight rebound after weight loss is a frequent issue^(6,7). The long-term use of ROYAL CANIN® SATIETY® can significantly limit regain in the follow-up period. Recent research^(8,9) has shown that obese dogs and cats that maintain target weight after successful weight loss have an average daily metabolisable energy intake that is much lower than current maintenance energy recommendations for inactive pets. Therefore, resuming the pet's previous diet without controlling its calorie intake would result in rapid weight gain.

To determine the long term success of a weight loss regimen and to assess the factors linked with weight regain, the post-slimming period of 33 obese dogs referred to the Royal Canin Weight Management Clinic (University of Liverpool) was studied⁽⁷⁾. All dogs had successfully lost weight. For weight maintenance, 16 dogs were switched to a standard maintenance diet and 17 continued with their Royal Canin Weight Management diets. The median duration of follow-up was 640 days. There were no differences between diet groups for the energy intake during weight loss and, more specifically, at the start of the maintenance period.

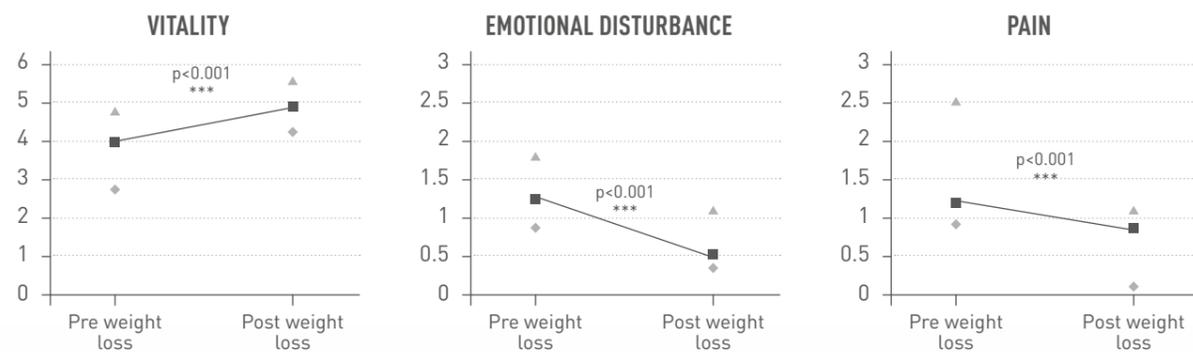
However, dogs that continued with their weight loss diet were 20 times less likely to regain weight than those switched to a standard maintenance diet. Only 18% of dogs kept on their weight loss diet regained weight, whereas rebound was observed in 81% of dogs fed a maintenance diet.

CRITERION	ROYAL CANIN WEIGHT LOSS DIET (N=17)	STANDARD MAINTENANCE DIET (N=16)
GENDER	Neutered male (11) Neutered female (6)	Male (1) Neutered male (8) Neutered female (7)
AGE	72 months (19 to 126)	78 months (19 to 110)
CHANGE FROM OPTIMAL WEIGHT	1% (-7 to 27)	7% (0 to 31)
FOLLOW-UP DURATION	701 days (140 to 1216)	485 days (224 to 1564)
STATUS AT FOLLOW-UP	Lost: n=3 (18%) Stable: n=11 (64%) Gained: n=3 (18%)	Lost: n=0 (0%) Stable: n=3 (19%) Gained: n=13 (81%)

ACHIEVING WEIGHT LOSS USING ROYAL CANIN® SATIETY® WAS SHOWN TO IMPROVE QUALITY OF LIFE

Another study conducted at the Royal Canin Weight Management Clinic, published in 2012, provided the first scientific evidence of the benefits of weight loss on quality of life^[10]. This study included 50 obese dogs, of various breeds and genders. A weight management protocol was instigated for each dog, using Royal Canin Weight Management diets. Owners were asked to complete a standardised questionnaire designed to determine health-related quality of life prior to and after weight loss. Their answers were converted into scores on a scale of 0-6, corresponding to a range of four factors: vitality, emotional disturbance, anxiety and pain. Quality of life improved in the dogs that successfully lost weight. Vitality scores were indeed significantly increased, and pain scores were significantly decreased after weight loss: the more body fat lost, the greater the improvement in vitality scores.

Effect of weight loss on Health-Related Quality of life



ROYAL CANIN® IS A MAJOR PRODUCER OF SCIENTIFIC KNOWLEDGE ON OBESITY IN DOGS AND CATS

Royal Canin is a **scientific reference** in the field of obesity. Beyond providing veterinarians with **the most adapted diets** to face the issue of obesity, Royal Canin Research Center, in collaboration with the Royal Canin Weight Management Clinic, also contributes to dog and cat **obesity research** on a daily basis, increasing the level of global scientific knowledge on this topic.

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