



WEIGHT MANAGEMENT PROGRAMME

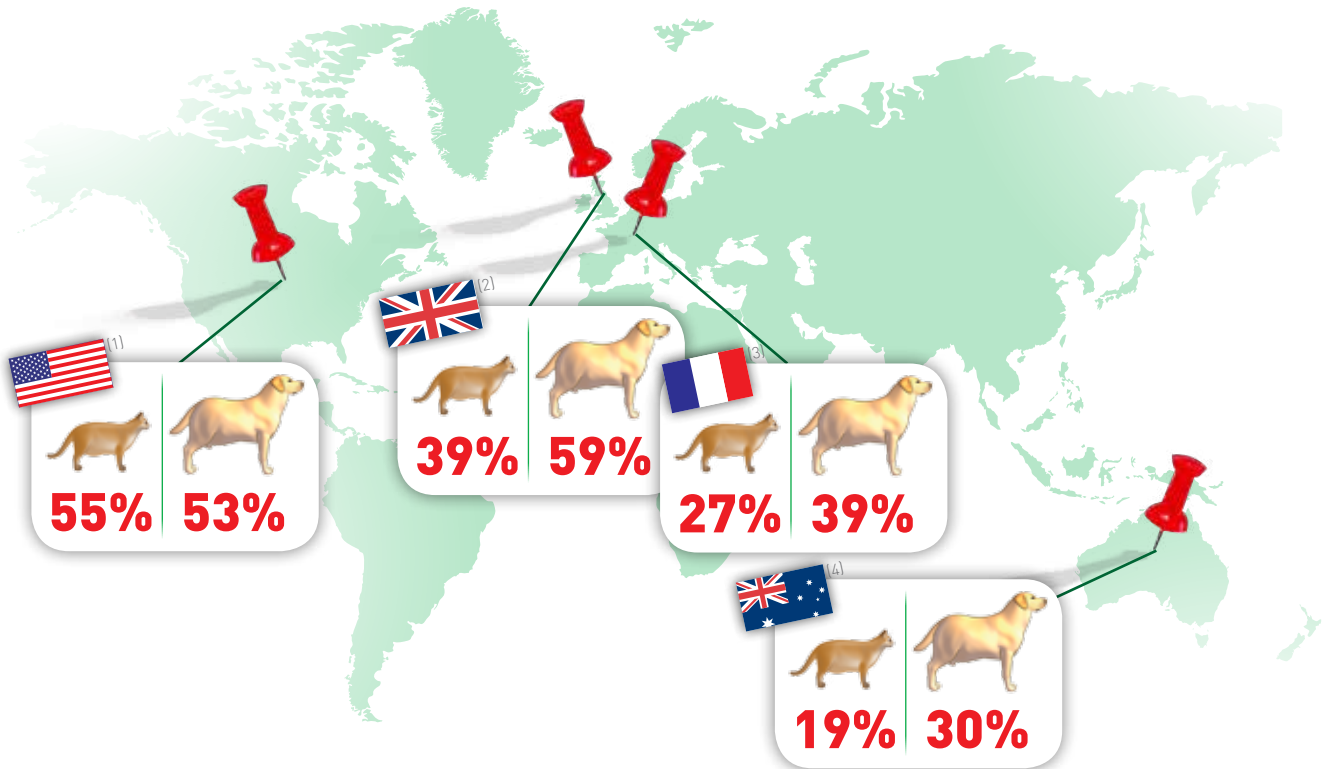
THE PROGRAMME TO PROMOTE **SUCCESSFUL**
WEIGHT MANAGEMENT IN YOUR CLINIC



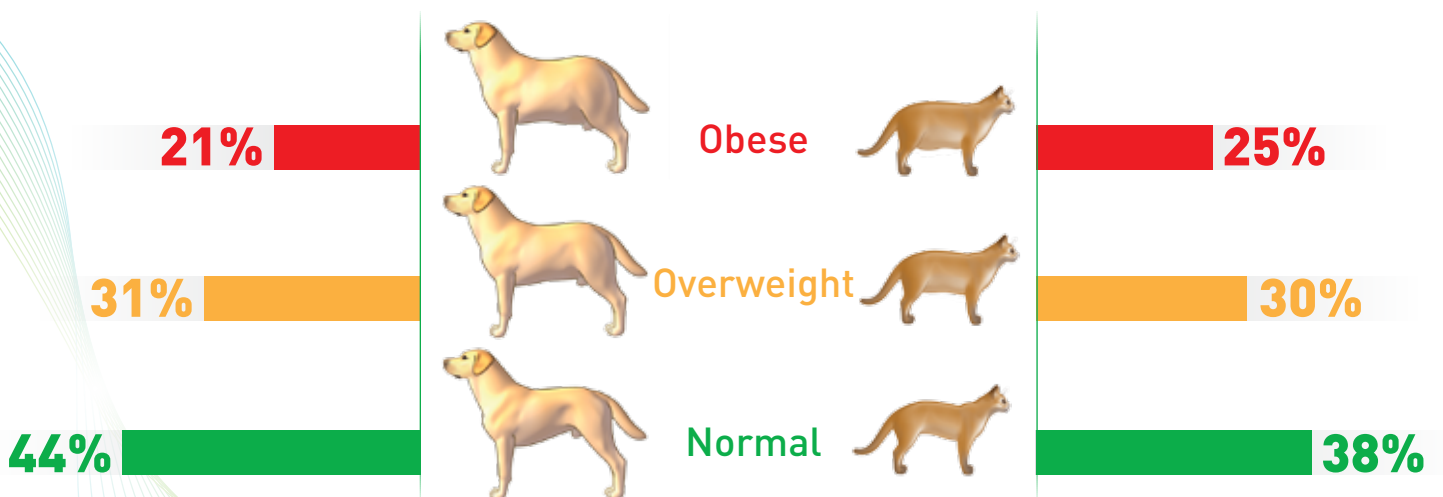
OBESITY IS THE DISEASE WITH THE ... WITH A GROWING

Prevalence of overweight and obese cats and dogs in various countries

Worldwide the prevalence ranges between 17% and 59% in dogs, and between 19% and 55% in cats.



Pet obesity in dogs and cats⁽¹⁾



(1) Source : APOP survey, October 2011 (n= 459, study conducted in 41 US veterinary clinics)
 (2) Courcier 2010
 (3) Collard 2009 and 2006
 (4) Robertson 1999 and Bland 2010

HIGHEST PREVALENCE WORLDWIDE... IMPACT ON DOGS AND CATS

Pathologies associated with obesity

UPPER RESPIRATORY TRACT DISEASES

Tracheal collapse
Laryngeal paralysis
Upper airway obstruction syndrome (brachycephalic dogs)



OSTEOARTICULAR DISEASES

Osteoarthritis
Intervertebral disc protrusion
Cruciate ligament rupture



URINARY DISEASES

Urinary stones
Urinary tract infections



CARDIOPULMONARY DISEASES

(aggravation or facilitation)
Congestive heart failure
Pulmonary insufficiency



EXCESSIVE FAT ACCUMULATION



Cholesterol, fatty acids, glycerol,
steroid hormones, cytokines

Pro-inflammatory adipokines

TUMOURS

Mammary tumours

METABOLIC DISORDERS

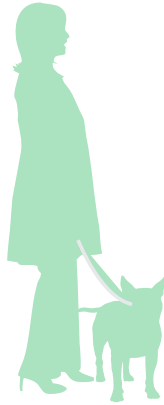
Hyperlipidemia
Insulin resistance

Obesity has very similar negative effects on cats. Moreover, cats are 4 times more at risk of developing diabetes mellitus.



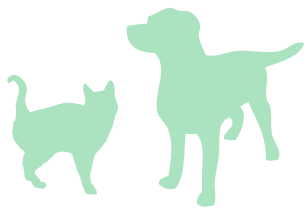
DECREASED LIFE EXPECTANCY REDUCED QUALITY OF LIFE

WHY OBESITY IS SO DIFFICULT TO ADDRESS?



The pet owner:

- Does not **recognise or acknowledge** obesity
- Is not aware of the **gravity** of the **pathology**
- Has a fear of **starving** his/her pet



The pet:

- **Lack** of exercise
- **Unenriched** environment
- **Imbalance** between energy intake and energy expenditure



The clinic:

- **Message difficult to explain** to pet owners
- Obesity is **not normally the priority** during the consultation
- **Time consuming**

HERE IS THE SOLUTION:

The Royal Canin Weight Management Programme helps to address each area to deliver better long term success.



WEIGHT MANAGEMENT PROGRAMME

3 steps to success

1. DIAGNOSE

Effectively diagnose
overweight and obese
cases

2. COMMUNICATE

Improve
communications with
your clients
to increase compliance
and success

3. RECOMMEND

Successful long term
nutritional solutions



1 DIAGNOSE OBESITY

BCS Digital: a new interactive 3D tool



- Individualised BCS
- Calculate daily feeding amounts
- Vet and pet owner tracked weight loss
- Post weight loss management

How BCS Digital works

First: Select a breed and enlarge the anatomical areas

The screenshot shows the BCS Digital interface. At the top, it says 'You can rotate the 3D image using the cursors'. The main interface has a header 'BCS Body Conditioning Score' and 'MINI - TERRIER JACK RUSSELL'. Below the header are five tabs: 'MAKE YOUR BCS', 'COMPARE BCS', 'IDEAL BCS', 'ANATOMIC VIEW', and 'HISTORIC'. The 'ANATOMIC VIEW' tab is active. On the left, there are five anatomical area sliders: 'LEGS', 'RIB CAGE', 'THIGH', 'HIP', and 'ABDOMINAL AREA'. Each slider has a red bar and a scale of 10 circles. Below these sliders are 'RESET' and 'DISCOVER BODY CONDITION SCORE' buttons. On the right, there is a 'CHANGE BREED' button. A 3D model of a dog is in the center. To the right of the interface, there are two lists of dog breeds: 'Select from 6 different breeds:' and 'Or from 5 different morphotypes: X-Small, Mini, Medium, Maxi and Giant'. A small dog icon is at the bottom right.

Once you are finished, discover the BCS

Reset the image if required

EASY, FAST AND PRECISE DIAGNOSIS OF YOUR PATIENT'S BCS AND TARGET WEIGHT

Scan the code to take you to our online demonstration of BCS Digital



9 is the new 5

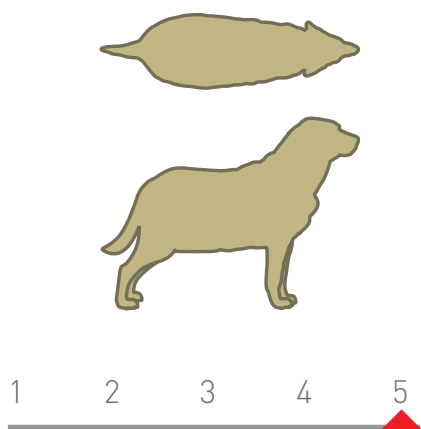
THE WSAVA IS CHANGING THE WAY IT ASSESSES BODY CONDITION - AND SO ARE WE!

In 2011, the World Small Animal Veterinary Association's Global Nutrition Committee published Global Nutritional Assessment Guidelines. Their guidelines use a 9-point Body Condition Score as gold standard and more and more veterinary professionals are using the same system. At Royal Canin, we are making the same move.

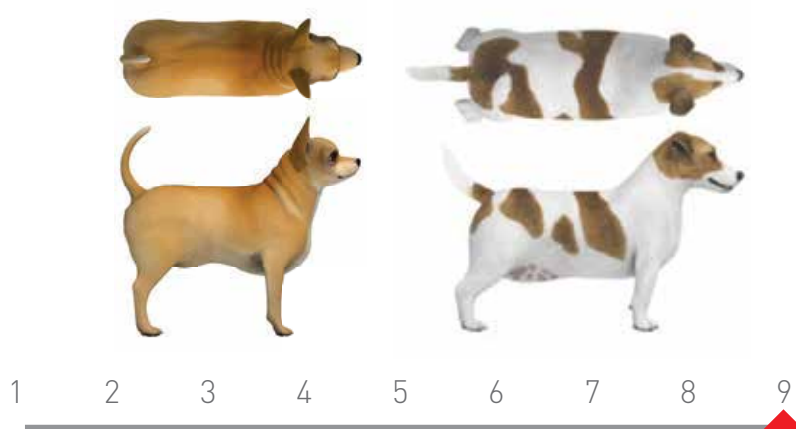
BUT WE'VE GONE EVEN FURTHER!

Together with experts from Liverpool University's Weight Management Clinic, we have modelled the real shapes of different dog breeds and sizes at every point on the scale, providing you with a range of accurate size and breed-appropriate images to show your clients.

MORE ACCURATE IMAGES MEAN BETTER CLIENT EDUCATION AND BETTER RESULTS FOR YOUR PATIENTS



Using the 5-point scale, diagrams were less accurate and did not take breed-specific patterns of fat deposition into account.



At BCS 9, a toy breed like a Chihuahua is likely to have a lot of fat deposited around the chest and neck, but may still show a ventral abdominal tuck.

A Jack Russell Terrier at the same BCS is likely to carry more of its excess fat in the abdomen and less around the chest and neck.

2 IMPROVE COMMUNIC

Encourage owners to engage in conversation about their pets' weight

Education of pet owners made easier

New weighing area materials

Light, modular design,
ideal for use in a
waiting room

Photo grids to help
clients visualise and
recognise BCS. The
grid is integrated into
the back board and mat
of the weighing scales
for convenience and
ease of use



Information regarding the
ideal body condition and
an attractive invitation to
the pet owner to weigh
their pet

ATION

and follow-up overweight and obesity cases

Vet Follow Up: Weight Management module

A new and exclusive online tool for your practice

1 Create a new patient

2

Enter the pet's data in easy steps

The program automatically calculates calorie allocation and ration

3

5 Create an electronic link with the pet owner to ensure compliance

4

Keep track of your patient's results with the history and useful graphs

3 RECOMMEND NUTRITION



SATIETY

SCIENTIFICALLY PROVEN
TO HAVE 5 BENEFICIAL EFFECTS

FEATURES OF ALL SATIETY PRODUCTS



Special blend of fibres that increases the volume of stomach contents and promotes satiety (reduces the spontaneous consumption of food).



A high protein content helps maintain muscle mass during a weight loss programme.

CATS



Essential fatty acids (Omega 3 and Omega 6) and trace elements (Cu, Zn) maintain healthy skin and coat.

Ideal weight up to 10 kg - DRY



Contains specific nutrients which contribute to maintaining good oral health.

ONAL ANSWERS



1. Stimulates effective weight loss^{1,2}
2. Reduces begging^{2,3}
3. Maintains muscle mass¹
4. Improves quality of life⁶
5. Stabilises weight^{4,5}



Enriched with nutrients (protein, minerals and vitamins) to compensate for energy content restriction and ensure health during a weight loss programme.

Scientific references:

1. German AJ et al. A high protein, high fibre diet improves weight loss in obese dogs. *The Veterinary Journal* 183 (2010) 294–297. 2. Bissot T et al. Novel dietary strategies can improve the outcome of weight loss programmes in obese client-owned cats. *Journal of Feline Medicine and Surgery* (2010) 12, 104–112. 3. Weber M, Bissot T, Servet E, Sergheraert R, Biourge V, and German AJ. A high protein, high fiber diet designed for weight loss improves satiety in dogs. *J Vet Intern Med* 2007;21:1203–1208. 4. German AJ et al. Low-maintenance energy requirements of obese dogs after weight loss. *British Journal of Nutrition* (2011), 106, S93–S96. 5. German AJ et al. Long term follow-up after weight management in obese dogs: The role of diet in preventing regain. *The Veterinary Journal*, May 2011. 6. German AJ, Holden SL, Wiseman-Dorr ML, Reid J, Nolan AM, Biourge V, Morris PJ, Scott EM. Quality of life is reduced in obese dogs but improves after successful weight loss. *The Veterinary Journal*. 2012 Jun;192 (3):428–34.

DOGS

Ideal weight more than 10 kg - DRY



Nutrients help support healthy bones and joints placed under stress by excess body weight

All dogs - WET



WHAT ABOUT

OBESITY MANAGEMENT ?

OBESITY MANAGEMENT remains a very good answer for pets currently losing weight on the diet. For certain conditions where an increase in fibre is not recommended, **OBESITY MANAGEMENT** remains the gold standard

EXPLORE THE SCIENCE OF SATIETY

ROYAL CANIN **SATIETY** IS SUPPORTED BY AN EXCEPTIONAL BODY OF EVIDENCE GATHERED FROM RESEARCH IN CLIENT-OWNED PATIENTS.

Peer-reviewed field studies have shown that Royal Canin SATIETY Veterinary Diets :

- ✓ stimulate a successful and safe weight loss^{1,2}
- ✓ promote satiety, reducing voluntary energy intake and begging behaviour^{2,3}
- ✓ maintain lean body mass during weight loss¹
- ✓ maintain stable bodyweight after weight loss^{4,5}
- ✓ improve quality of life⁶



References

1. German AJ et al. A high protein, high fibre diet improves weight loss in obese dogs. *The Veterinary Journal* 183 (2010) 294–297
2. Bissot T et al. Novel dietary strategies can improve the outcome of weight loss programmes in obese client-owned cats. *Journal of Feline Medicine and Surgery* (2010) 12, 104–112
3. Weber M, Bissot T, Servet E, Sergheraert R, Biourge V, and German AJ. A high protein, high fiber diet designed for weight loss improves satiety in dogs. *J Vet Intern Med* 2007;21:1203–1208
4. German AJ et al. Low-maintenance energy requirements of obese dogs after weight loss. *British Journal of Nutrition* (2011), 106, S93–S96
5. German AJ et al. Long term follow-up after weight management in obese dogs: The role of diet in preventing regain. *The Veterinary Journal*, May 2011.
6. German AJ, Holden SL, Wiseman-Orr ML, Reid J, Nolan AM, Biourge V, Morris PJ, Scott EM. Quality of life is reduced in obese dogs but improves after successful weight loss. *The Veterinary Journal*.2012 Jun;192 (3):428–34

SATIETY & successful weight loss

IN DOGS¹



This paper compared 2 nutritional strategies and their performance during weight loss, in 42 client-owned dogs with naturally-occurring obesity :

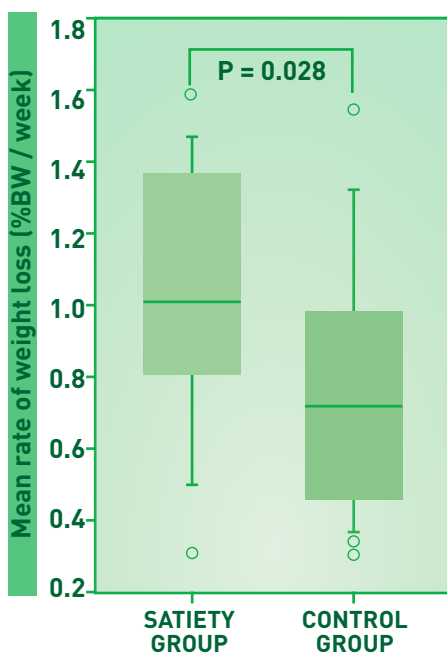
- High protein, high fibre (Royal Canin SATIETY Canine dry); n=15
- High protein, medium fibre (Royal Canin Obesity Management Canine dry); n=27

Baseline characteristics (signalment, percentage overweight, and body fat percentage) were not significantly different between groups. The weight loss regimen was the same between the two groups. However, the percentage 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.

► Royal Canin SATIETY improves the outcome of weight loss in obese dogs

	Satiety group n=15	Control group n=27	P value
STARTING BODY WEIGHT	36.6 kg (19-132)	28.9 kg (5.3-100)	0.555
TARGET BODY WEIGHT	25.8 kg (9.2-51.4)	24 kg (4.2-70)	0.896
STARTING BODY FAT	46% (31-51)	43% (27-55)	0.684
DURATION OF WEIGHT LOSS	182 days (105-391)	172 (84-687)	0.591
MEAN ENERGY ALLOCATION	63 kcal / kg ^{0.75} / day using target bodyweight (44.1-69.3)	63 kcal / kg ^{0.75} / day using target bodyweight (48.3-86.1)	0.844
WEIGHT LOSS	31.8 % (12-42)	20 % (5.9-45)	0.016*
RATE OF WEIGHT LOSS	1% per week (0.3-1.6)	0.7% per week (0.3-1.5)	0.028*
FINAL BODY FAT	27% (10-36)	33% (16-47)	0.005*
CHANGE IN BODY FAT MASS	58% (32-85)	37% (15-72)	0.002*

All data are expressed as median (range)



IN CATS²

The largest random, single-blind, weight loss trial ever published about client-owned cats!

48 client-owned cats with naturally occurring obesity completed this 20 week weight loss trial comparing 3 dietary strategies :

- Group A (n=16): Royal Canin SATIETY Feline dry (in small bags of 60 kcal).
- Group B (n=18): Mixed ration of Royal Canin SATIETY Feline dry (in small bags of 60 kcal and 100 g of Royal Canin Obesity Management wet (1 pouch).
- Group C (n=14): Hill's r/d™ feline dry (in bags of 3 kg with a measuring cup)

After the enrolment visit, cats were randomly allocated to one of the 3 groups. At baseline, the 3 groups were homogenous for number of animals, bodyweight, body condition score, and gender distribution. They were fed between 30 and 35 kcal/kg/day, based on target bodyweight. Cats were assessed at weeks 4, 12 and 20, and energy allocation was adjusted as necessary.

Body Condition Score decreased significantly with time on all diets. The main outcomes of weight loss did not differ amongst the 3 strategies. The mean percentage of weight lost over the 20-week course was similar amongst groups (11.0%, 10.9% and 11.9%, respectively).

However, there were differences with regard to practicality and owner's perception of their cat's behaviour and wellbeing. Owners reported an increase in activity with time, with a statistically significant difference only for strategy A (SATIETY). They also reported an increase in coat condition with all strategies, and a decrease in seborrhoea, only with strategies A and B. At the end of the diet, the practicality scores reported by the owners of cats in strategy A were significantly higher than those of strategy C.

Body weight of cats over time with different diet strategies.

		SATIETY feline dry				Mixed ration of SATIETY feline dry and Obesity Management feline pouch				Hill's r/d™ feline dry			
Time (weeks)	Body weight (kg)	TO	T4	T12	T20	TO	T4	T12	T20	TO	T4	T12	T20
		7.20 ^a	6.93 ^b	6.59 ^c	6.41 ^d	6.94 ^a	6.74 ^b	6.38 ^c	6.18 ^d	7.35 ^d	7.13 ^b	6.78 ^c	6.47 ^d
		±1.827	±1.729	±1.650	±1.558	±1.633	±1.514	±1.490	±1.417	±1.512	±1.512	±1.373	±1.200

► **Successful weight loss in obese cats can be achieved with SATIETY, with reported benefits on patients' wellbeing, most notably an increase in activity, an improved coat condition, and reduced begging behaviour.**



Royal Canin SATIETY and... Satiety

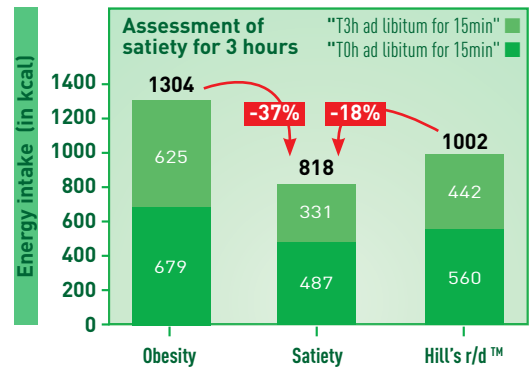
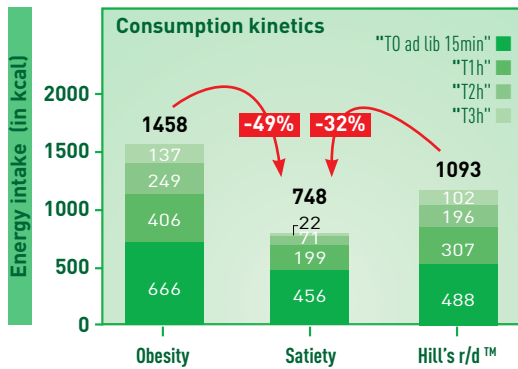
Satiety can be defined as the feeling of fullness and the disappearance of appetite after a meal. The control of food intake in dogs and cats is complex, incompletely understood, and involves multiple interconnected pathways and signal elements. It is much more difficult to evaluate the feeling of satiety in dogs or in cats than it is in humans. Therefore, satiety in dogs and cats is generally assessed using indirect methods and the inclusion of more measurable criteria, such as voluntary food intake and behaviour markers.

IN DOGS³



The effect of SATIETY canine in reducing voluntary energy intake was assessed in dogs through several crossover studies comparing 3 different diets: HPHF (SATIETY Canine), HP (Obesity Management Canine) and HF (Hill's r/d TM canine). To do so, 6 dogs were fed ad libitum during sequential 15 minutes periods.

- One study assessed satiety during repeated short term food exposure. This consisted in measuring energy ingested by the 6 dogs, when food was offered for 15 minutes every hour for 4 hours. This protocol was applied twice for each diet, on 2 non-consecutive days. Results showed that short term food intake was lower for Satiety than for both HP and HF diets.
- A second study assessed the medium-term satiety effect. This consisted in measuring the energy ingested by the 6 dogs when food was offered again 3 hours after the initial presentation of food. This protocol was applied for 2 consecutive days. Results showed that energy ingestion was lower for both Satiety and HF than for HP diet.

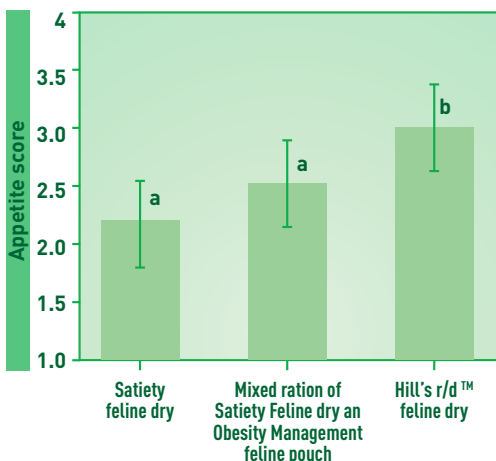


IN CATS²



In the clinical trial assessing the efficacy of SATIETY Feline², satiety was assessed through a "begging score". Owners assessed how hungry their cat was with a four-point scale (score 1: no change in hunger; scores 2- 4 : mild, moderate and severe increase in hunger, respectively); other specific alterations in behaviour were also assessed as being present or absent e.g. increased vocalisation, stealing food, increased owner-contact and aggressiveness towards the owner.

Over the 20-week study, a significant diet effect was observed on owner-reported 'hunger' scores. The hunger score was significantly higher with the competitor diet as compared with both SATIETY strategies (dry only or mix fed with Obesity Management wet). Furthermore, at 20 weeks, owners of cats on the competitor diet reported that cats vocalised more and sought more contact with their owners.



Begging behaviour

- The cat does not beg for more food = 1
- The cat begs for food but as before = 2
- The cat begs for food but more as before = 3
- The cat begs permanently = 4

Begging signs

- | | | |
|--------------------|--------|-------|
| -Irritating mewing | Yes= 1 | No= 0 |
| -Clingy cat | Yes= 1 | No= 0 |
| -Steal food | Yes= 1 | No= 0 |
| -Aggressiveness | Yes= 1 | No= 0 |

BEGGING SCORE

= [Begging behaviour (1 to 4) + Begging signs (0 to 4)] =/8

Vitality scores were indeed significantly increased, and pain scores were significantly decreased after weight loss : the greater the loss in body fat, the greater the improvement in vitality score. When comparing this data to that of the dogs that did not complete the weight loss program, vitality scores were higher and emotional disturbance scores were lower.

Effect of weight loss on Health-Related Quality of Life



▶ Losing weight has a very positive impact on dog’s quality of life. This is of great interest to help convince owners of obese dogs of the importance of making their pets lose weight.

SATIETY and long term weight loss^{4,5}

Once its target bodyweight is reached, the pet enters a critical weight stabilisation phase, and weight rebound after weight loss is a frequent issue. The long-term use of SATIETY can significantly limit regain in the follow-up period.

Recent research 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 pets⁴. 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, we studied the post-slimming period of 33 obese dogs⁵ referred to the Royal Canin Weight Management Clinic (University of Liverpool).

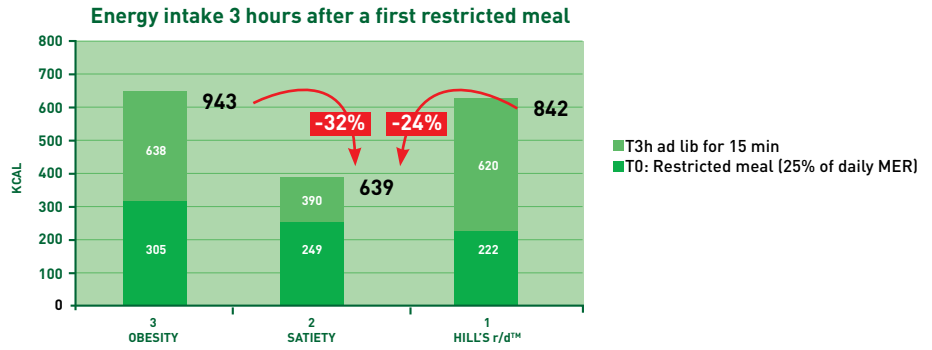
All dogs had successfully lost weight. For weight maintenance, 16 dogs were switched to a standard maintenance diet and 17 continued with their Royal Canin weight management diets (SATIETY for 13/17dogs or OBESITY MANAGEMENT for 4/17). The median duration of follow-up was **640 days**. There were no 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 regained significantly less weight than those switched to a standard maintenance diet. Only 18% of dogs regained weight in the weight loss diet group, whereas rebound was observed in 81% of dogs that were switched to a maintenance diet.

▶ Long term use of SATIETY can significantly limit weight regain after a successful weight loss programme.

Criterion	Weight loss diet (Satiety canine, n=13, Obesity Management Canine, n=4)	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%)



• A third protocol assessed the satiety effect of an energy restricted meal. Voluntary energy intake was measured 3 hours after feeding a restricted meal (25% of the daily maintenance energy requirements). The protocol was repeated for 2 consecutive days. The results showed that energy consumption was significantly lower on the Satiety diet than on either the HP or HF diets.



► In both dogs and cats, **SATIETY** is the nutritional strategy that promotes the greatest Satiety effect, reducing voluntary energy intake and limiting begging behaviour.

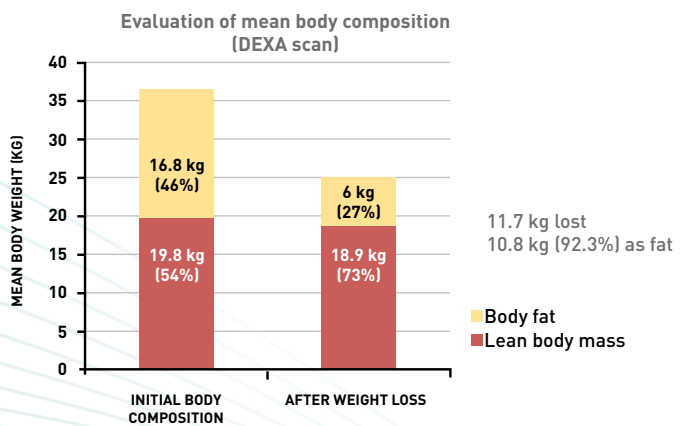
SATIETY & lean body mass¹

When losing weight, the primary objective is to lose body fat while preserving lean body mass. An adapted protein intake helps minimise muscle mass loss during weight loss.

A high protein intake may result in increased availability of amino acids for protein synthesis and 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 of several studies have suggested that a higher protein/calorie ratio had positive effects on the preservation of lean body mass during weight loss.

Clinical weight loss trials in dogs fed SATIETY have shown that dogs mostly lost fat mass and that lean body mass loss was minimal. In a 2010 study¹, 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.

► The high protein/calorie ratio of **SATIETY** helps minimise lean body mass loss during a weight loss programme.



SATIETY and quality of life⁶

In a study conducted at the Royal Canin Weight Management Clinic⁶ (University of Liverpool, UK), owners of obese dogs that successfully lose weight using the Royal Canin SATIETY diet noticed a significant improvement in their companion's quality of life.

This research involved 50 client-owned obese dogs, from various breeds and genders, referred to the Royal Canin Weight Management Clinic. A weight management protocol was instigated on each dog, using Royal Canin diets designed for weight loss.

Owners were asked to complete a standardised questionnaire designed to determine health-related quality of life (HRQOL) 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. Thirty dogs completed the study and successfully reached their target bodyweight. The results showed that quality of life improved in the dogs that successfully lost weight.

Royal Canin is a major contributor to scientific knowledge regarding obesity in dogs and cats.

Royal Canin is a scientific reference in the field of obesity. Beyond providing Veterinarians with the most specialised diets to face the issue of obesity, the Royal Canin Research Centre also contributes to dog and cat obesity research on a daily basis, increasing the level of global scientific knowledge on this topic.

Research focuses on all aspects related to obesity, such as the nutritional management of overweight pets or the clinical trials of new products, whilst also addressing a broader knowledge of this condition. This includes epidemiology, risk factors, diagnosis and methods of measuring body composition, pathogenesis, associated diseases, as well as the benefits of losing weight.



Below are some recent studies on obesity in cats and dogs, conducted in partnership with Royal Canin:

- Serisier S. et al. Weight loss and post weight loss maintenance energy requirements of obese colony cats. Proceedings 21st ECVIM Congress - Sevilla 2011.
- Servet E, Soulard Y, Venet C, Biourge V. Evaluation of diets for their ability to generate « satiety » in cats. Proc. of the 26th ACVIM congress, San Antonio, 2008; p 879.
- German AJ, et al. Improvement in insulin resistance and reduction in plasma inflammatory adipokines after weight loss in obese dogs. *Domest Anim Endocrinol* (2009).
- Serisier S, et al. Faster growth rate in ad libitum fed cats: a risk factor predicting the likelihood of becoming overweight during adulthood. *Journal of Nutritional Science* (2013) free online access.
- Tvarijonaviciute A, et al. Obesity-related metabolic dysfunction in dogs: a comparison with human metabolic syndrome. *BMC Vet Res.* 2012 Aug 28;8:147.
- Chauvet A, et al. Incorporation of exercise, using an underwater treadmill, and active client education into a weight management program for obese dogs. *Can Vet J.* 2011 May;52(5):491-6.
- German AJ, et al. Obesity, its associated disorders and the role of inflammatory adipokines in companion animals. *The veterinary Journal* 185 (2010) 4-9.
- German AJ, et al. Imprecision when using measuring cups to weigh out extruded dry kibbled food. *Journal of Animal Physiology and animal Nutrition* 95 (2011) 368-373.
- German AJ, et al. Do feeding practices of obese dogs, before weight loss, affect the success of weight management? *British Journal of Nutrition* (2011)106, S97-S100.

For more information about the Royal Canin Weight Management Programme or any of our Veterinary diets please contact your Veterinary Business Manager or visit www.royalcanin.co.uk / royalcanin.ie