

Weight management in client-owned dogs fed a high protein – low carbohydrate maintenance diet

G. Chaix^a, C. Navarro^a, S. Fournel^a, I. Leriche^b

^a Virbac Medical and R&D Department, Carros, France

^b Virbac Nutrition, Vauvert, France

Introduction



Excessive bodyweight (BW) is the most common nutritional condition in pets: 33.8 to 38.9% of dogs are overweight, and 5 to 20.4% are obese.¹⁻³ Specific weight loss diets, formulated on a low energy - high fibre concept, are frequently poorly palatable and often perceived as too burdensome by pet owners.⁴ So there is a need for non-restrictive palatable diets which could assist pets to gradually lose weight.

The aim of this study was to assess the weight loss achieved with a high protein - low carb maintenance diet by overweight dogs which had previously failed with a weight loss programme.

Animals, materials and methods

During 8 weeks, 40 overweight adult dogs were given a new dry maintenance diet (Table 1). 0.5 to 1% weight loss per week was targeted. Individual daily rations were calculated each week, based on the energy requirement, estimated at $0.8 \times 0.8 \times 156 \times BW^{0.667}$ (BW being recorded weekly).⁵ A General Linear Mixed Model (factors: fixed (time), random (dog)) was used to test weight loss between weeks, with a 5% significance level.

Table 1: Nutritional characteristics of the tested diet

Crude proteins	36%
Animal/vegetable protein ratio	87/13
Crude fat	12%
Crude fiber	9.5%
Nitrogen free extract	27.5%
Metabolisable energy	320kcal/100g

Results

80% of dogs lost weight and 65% had a visibly slimmed silhouette. The mean weight loss was 0.82% per week. Rationing was not too strict as 84% of owners estimated that their dog's appetite was correctly satisfied during weight loss: 90% of dogs appreciated the tested diet, according to their owners and 80% of pet owners were ready to buy this diet, and 82% would recommend it to friends.

Fig. 1: Evolution of the bodyweight of dogs responding to the diet

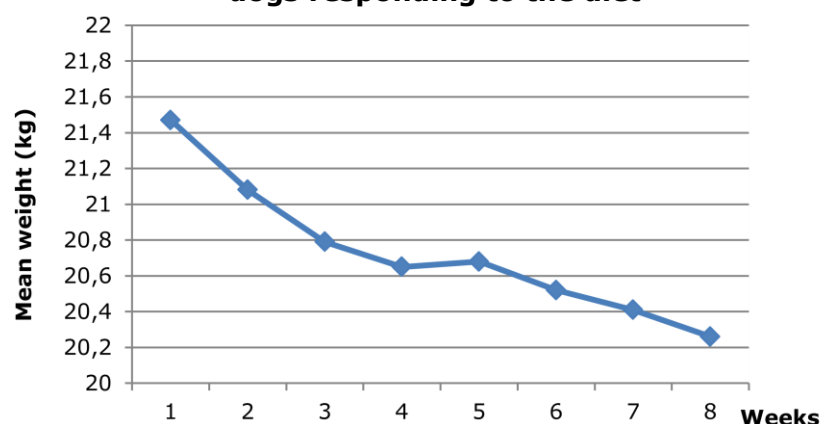


Table 2: Weight loss for dogs responding to the diet

Visit	Weight loss (kg)	p value
Week 1 - week 2	-2.0934	<.0001*
Week 2 - week 3	-1.2050	0.0028*
Week 3 - week 4	-0.7441	0.0630
Week 4 - week 5	0.04722	0.9057
Week 5 - week 6	-0.6927	0.0833
Week 6 - week 7	-0.3660	0.3588
Week 7 - week 8	-0.7975	0.0465*

* Statistically significant weight loss

Conclusion

The high animal protein content of this food allowed to obtain a gradual loss of weight and a sufficient satiety while maintaining good palatability, the two last criteria being essential for pet owners' compliance and satisfaction^{6,7}.

1) APOP. 2012 National pet obesity awareness day survey. <http://www.petobesityprevention.com> ; 2) Colliard C et al. *J Nutr* 2006; 136: 1951S-1954S ; 3) Courcier EA et al. *J Small Anim Pract* 2010; 51: 362-367 ; 4) Becker N et al. *Tierärztl Prax Ausg K Kleintiere Heimtiere* 2012; 40(6): 391-397 ; 5) Kronfeld DS. *Purina Intern Nut Symposium, Orlando, Florida* 1991: 5-11 ; 6) Gerstein D et al. *J Am Diet Assoc* 2004; 104: 1151-1153 ; 7) Weber M et al. *J Vet Intern Med* 2007; 21: 1203-1208