EVALUATION OF A HIGH PROTEIN, LOW CARBOHYDRATE DIET IN OBESE BEAGLE DOGS

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In companion animals, obesity is a common nutritionally related health problem. The principle of any weight loss program is to provide limited amounts of energy in order to induce weight loss whilst providing sufficient nutrients, and especially protein to minimise deficiency and losses of fat free mass (1).
The study compared a high protein, low starch and high fibre diet -DP -(crude protein 44.1 %, fat 8.7 %, crude fibre 10.0 % -as is) with a low protein, high starch and high fibre diet -HF- (crude protein 21.6 %, fat 7.7 %, crude fibre 21 % -as is) during the weight loss program of 8 adult chronically obese Beagles, 4 neutered males and 4 intact females, showing at least 30 % excess body weight (BW). The dogs were allotted into 2 groups according to sex and BW. Body composition was determined using deuterium labelled water dilution method (2), before and after the energy restriction. Initially, dogs were fed the same amount of food that they were eating on the maintenance baseline diet (crude protein 24.0 %, fat 16.1 %, 3810 kcal/kg). The amounts of food were progressively decreased to induce a weekly rate of weight loss of around 2 %.
A moderate energy level –80 % of the maintenance energy requirement (MER) for optimal BW in males and 65 % MER in females- induced weight loss but was not sufficient to maintain it. Energy allowance was thus gradually decreased to reach 65 % MER for males and 45 % MER for females in order to reach the target weight. Those levels of restriction led to a weekly rate of weight loss of 2 and 2.4 % for the DP and HF diets respectively. Target weight and optimal body condition were reached within 12 to 24 weeks for the HF diet and 21 to 26 weeks for the DP. The proportion of lean tissue in total weight loss was 30 % and 20 % for the HF and DP diets respectively.
In conclusion, a higher protein level allows a better conservation of the lean body mass. Energy restriction must be stricter in females than in males in order to induce and maintain weight loss. Energy restriction must be regularly adapted in order to maintain a constant rate of weight loss.

References

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