

## Effect of ad libitum feeding on body weight and blood metabolites in spayed female beagle dogs

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**Objectives:** Ovariohysterectomy can result in significant weight gain in bitches fed *ad libitum* (Haupt, 1979). The aim of this study was to determine the effect of *ad libitum* feeding on weight gain and blood metabolites in spayed female Beagle dogs.

**Materials and Methods:** Four young adult 2 year-old female beagle dogs were ovariectomized. First, the amounts fed of a commercial maintenance diet was adjusted during 26 weeks to maintain stable body weight (BW) (period I). Then, a high-energy commercial dog food (Royal Canin Energy Croc, crude protein 30 %, fat 20 %, ME 3890 kcal/kg as fed) was fed in large amount during 16 weeks (period II). The amount offered was twice the amount that maintained BW. Food left uneaten after 1 hour was collected and weighted. Cholesterol, triglycerides, glucose and insulin were measured every 2 weeks during period II.

**Results:** During period I, dogs received (mean  $\pm$  SEM)  $120.9 \pm 2.5$  kcal/ kg BW<sup>0.75</sup> to maintain BW. Mean BW at the end of this period was  $13.3 \pm 0.4$  kg. When a high energy food was allowed in double amounts, dogs spontaneously ate significantly ( $p < 0.05$ ) more food with food amounts corresponding to  $181.9 \pm 5.4$  kcal/ kg BW<sup>0.75</sup>. At the end of the second period, mean BW was  $16.7 \pm 0.8$  kg, which represents a significant increase ( $p < 0.05$ ) of BW of 21.9 %. Period II can be divided in 4 subperiods of 4 weeks. Each subperiod was compared with period I for statistical analysis. The first four weeks, mean energy consumption was  $211.5 \pm 9.4$  kcal/ kg BW<sup>0.75</sup> ( $p < 0.01$ ) and dogs consumed all the proposed food. Then, the ingested amounts decreased spontaneously. Mean energy consumption was  $180.6 \pm 12.5$  ( $p < 0.01$ ),  $176.1 \pm 9.9$  ( $p < 0.01$ ),  $159.6 \pm 7.2$  ( $p < 0.05$ ) kcal/ kg BW<sup>0.75</sup>, for each subperiod respectively. No significant effect was seen on blood metabolites during the second period.

**Conclusion:** *Ad libitum* feeding induced overconsumption and subsequent weight gain in spayed female beagle dogs. This overconsumption was observed during 16 weeks (length of the study) but was more important during the first 4 weeks. It seems that *ad libitum* feeding induced no significant effect on blood metabolites during the study.

### References:

Haupt K.A. et al., 1979. J Am Vet Med Assoc 174: 1083-1085.