

Cats reorganise their feeding behaviours when moving from ad libitum to restricted feeding

(LIGOUT ET AL., 2020)¹

THE AIM OF THIS RESEARCH WAS TO EVALUATE THE IMPACT OF CALORIE CUT-OFF ON INDIVIDUAL CAT FEEDING BEHAVIOURS.

Introduction

Obesity is a common disease that is becoming a health concern worldwide, affecting the human and pet population. The prevalence of overweight cats seems to grow within countries and in a recent report, published in 2017, it even reached 59% in the USA.

Weight loss programmes (WLP) are a widely used solution to prevent obesity. These programmes mainly consist of monitoring weight loss by controlling and limiting calorie intake, while usually increasing physical activity.

Sometimes it can be difficult to achieve the goals of a WLP and to ensure owners' commitment, due to possible changes in cat behaviour during calorie restriction. The objective of the present study was to evaluate the impact of calorie cut-off on individual cat feeding behaviours.

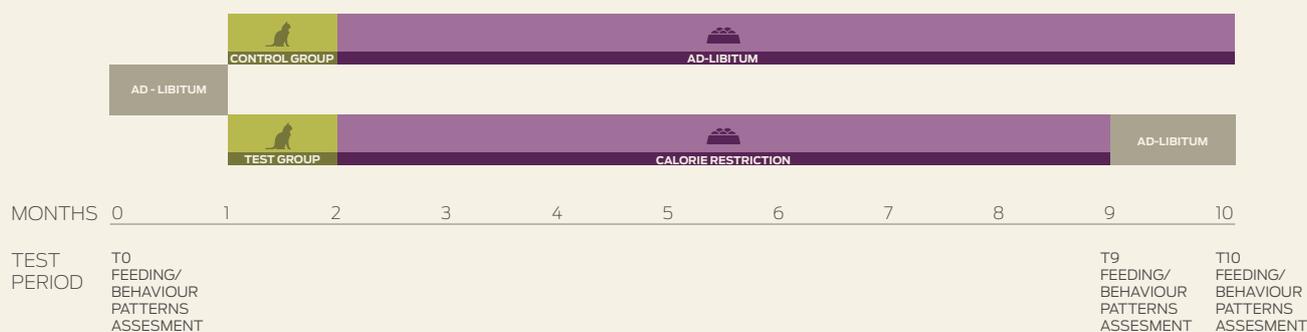
Study design

The study evaluated a control (n=31) and a test group (n=38) of domestic shorthair cats. Both groups were balanced for sex, age, weight, and body condition score (58% of control group had BCS >5/9 and 34% of test group had BCS >5/9). Each group received exactly the same maintenance food - ad libitum or restricted, depending on the group - and ad libitum water access over the entire study.

A period of ad libitum feeding was initially set (T₀), followed by a 9-month mild calorie restriction period for the test group only (T₉; average calorie restriction = 6%), and a final period of ad libitum feeding (T₁₀) (Figure 1).

Individual cat feeding behaviours were measured via an electronic feeding system, and agonistic interactions (i.e., aggressive behaviours, including physical contact and avoidance) between cats during food anticipation were evaluated through video observations.

FIGURE 1. Timeline describing the data collection periods of the feeding patterns and behaviour of both groups.



Results

The percentage of overweight cats (BCS >5/9) in the test group was lower than the initial value after the 9-month calorie cut-off period and also after 1 month of having returned to ad libitum food access: 34% at T0, 11% at T9 and 13% at T10.

The feeding behaviour of the control group remained stable during the entire study, while the test group showed fewer, but larger meals taken at shorter time intervals and a faster eating rate in response to calorie restriction. (Table 1)

In the test group, the number of agonistic interactions per cat increased during the calorie cut-off period. One month after returning to ad libitum feeding, all behaviours were largely restored to baseline values.

TABLE 1. Evolution of the feeding patterns of the control and test groups with dry food between T0, when there was no calorie restriction for any group, and the end of the calorie cut off period for the test group (t+9 months [t9])

Dry food feeding parametres	T0		T9		Evolution T0 toT9	
	Control	Test	Control	Test	Control	Test
Total number of meals	7	7	7	3	NS	↘
Total consumption (g)	49	47	47	33	NS	↘
Total consumption duration (mins)	11	13	11	7	NS	NS
Average meal duration (mins)	2	2	2	3	NS	NS
Average time between meals (mins)	189	183	196	122	NS	↘
Average eating rate (g/min)	5	5	4	6	NS	↗
Average consumption per meal (g)	7	7	7	14	NS	↗
Latency to start the first meal (mins)	115	98	117	24	NS	↘
First meal total consumption (g)	8	8	8	18	NS	↗
First meal total duration (mins)	2	2	2	3	NS	NS
First meal eating rate (g/min)	5	5	5	6	NS	NS
Interval between first and second meals (mins)	172	161	147	94	NS	↘

Arrow = significant evolution (P < 0.05); NS = no significant evolution (P > 0,1)

Conclusions

The study suggested that even a mild dietary restriction can strongly affect cats' feeding behaviours, which may explain some difficulties that owners are facing to comply with a calorie restriction programme.

Alternative feeding strategies that rely less on calorie restriction, i.e. foods favouring satiety, are also important for weight management.

References

¹Ligout S, Si X, Vlaeminck H, Lyn S. Cats reorganise their feeding behaviours when moving from ad libitum to restricted feeding [published online ahead of print, 2020 Mar 9]. J Feline Med Surg. 2020;1098612X19900387. doi:10.1177/1098612X19900387