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The Effect Of Food And Restricted Exercise On Behaviour Problems In Dogs

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Introduction

Behaviour problems in dogs account for the euthanasia of thousands of family pets annually. In many cases dog owners employ the services of pet behaviour consultants as a last resort in an attempt to cure unwanted behaviour. Traditionally the most popular methods of treating behaviour problems are behaviour modification techniques, drugs, or a combination of both. (eg. Neville, 1991, O'Farrell, 1989.) Frequently these methods are merely a short term solution as often only the symptom is treated while the underlying cause of the behaviour is neither recognised or addressed.

Over the past decade there has been a strong move towards an holistic approach in the successful treatment of human ailments. Importance is attached to the patient's lifestyle as a whole and symptoms are not examined in isolation. We have adopted a similar approach in the treatment of behaviour problems in dogs by placing on diet, physical activity, emotional state and environment, all of which are taken into account before treatment is recommended. By catering for highly individual needs, behaviour problems have been eliminated without the use of drugs or classic behaviour modification techniques. Success has been achieved through appropriate feeding and restricted exercise.

The basis for this hypothesis is the model of motivation proposed by Hughes and Duncan (1988). They suggested that there is a feedback from appetitive and consummatory behaviour which may positively increase the motivation for the behaviour. This model would explain abnormal behaviour which develops if the appropriate stimulus were not encountered or if the functional consequences were not fulfilled. This would result in a motivation increasing feedback loop. This increased motivation would therefore result in behaviour becoming repetitive and divorced from its original function. Inappropriate or insufficient feeding will result in physiological "hunger" which often manifests itself in behaviour such as aggression, in-pack fighting, pica, digging, chewing and hyperactivity etc. Motivation is often further excited by the introduction of physical stimulation in the form of play and/or exercise in an attempt to "rid the dog of its excess energy".

The effect of food on behaviour has been noted by most canine behaviour consultants in the past, including Fisher (1995), Campbell (1975) and Dodman *et al* (1996). Many differ in opinion as to the exact influence of nutrition on behaviour. However, we have found a strong correlation between diet and behaviour, and in order to treat behaviour problems successfully, particular dietary needs must be established and tailored to suit individual needs.

Materials and methods.

The data for this study consists of a cross section of 100 cases selected at random from approximately 1700. These were seen by the senior author over a 5 year period. Individual consultations lasted approximately 2 hours, during which time the dog was observed and an

in-depth case history taken by hand, detailing every aspect of the dogs lifestyle. Each case history was coded and stored on a spreadsheet for analysis.

A feeding programme was recommended to suit taste and appetite. As dietary requirements are highly individual (also noted by Campbell (1975)) it was recommended a dog be given a free choice of food and allowed to indicate its own preference. Tests revealed that most dogs preferred fresh meat products, therefore clients were encouraged to experiment with a diet of fresh meat (minced offal, beef, chicken, tripe) mixed with well cooked vegetables as a base, also with combinations of these foods to suit individual tastes. To prevent initial overeating it was recommended that small, highly appealing meals be fed frequently and the amount of food was gradually increased until intake stabilised. Both amount and frequency were also adjusted to suit the individual. This regimen was maintained thereafter. Raw, meaty knuckle bones were recommended and fed 2-3 times per week.

In cases where the dog was extremely hyperactive clients were advised to ignore the animal altogether until the treatment became effective. When the dog was subjected to regular exercise or encouraged to play with humans or other dogs, it was recommended that all forms of physical stimulation were to cease and the dog to be kept calm and rested for the duration of the treatment. Excitement in any form was to be avoided.

Results

Our study shows the effects of an appropriate diet and restricted exercise are unequivocally therapeutic in treating a wide cross-section of behaviour problems commonly experienced by clients

Most of the study cases were Staffordshire Bull Terriers, followed by German Shepherds. See table 1.

BREED	% CASES
Staffordshire Terrier	20
German Shepherd	19
Large mixes	9
Labrador Retriever	5
Golden Spaniel, Great Dane	4
Medium mix, Boerbul, Bull Mastiff	3
Bull Terrier, Doberman, Maltese Poodle	3
Border Collie, Boxer, Dalmatian	2
Husky, Rottweiler	2
Groenendaal, small mix, Chihuahua, Fox Terrier	1
Irish Setter, Newfoundland, Pug, Shitzu, Springer Spaniel	1

Table 1. Breeds represented in this study.

There was no significant association between breed and number of behavioural problems (Chi square test, $p > 0.05$). The cases were represented mainly by spayed females (36%) and entire males (31%). 25% were neutered males and 8% entire females. 56% of the cases were 1 year old or younger, 16% were 2 years, 14% were 3 years and 14% were between 4 and 9 years of age. There was a significant difference between behaviour problems reported by the clients and those revealed during consultation (Wilcoxon 2-sample

test, $p < 0.05$). Clients reported an average of 4 behaviour problems per dog, but this was increased to an average of 6 after questioning by the senior author.

86% of the cases were fed on commercial dry biscuits. 46% of these dogs found this food to be unappealing. Most (95%) of the problems were attributable to inappropriate feeding regimes and 77% were aggravated by over-stimulatory exercise and/or play. Feedback from 89% of clients was recorded - 98% reported a dramatic improvement.

Discussion

The breeds and genders presented in the sample mirror their popularity amongst the local pet owning population. Furthermore no single breed is abnormally represented in the sample of problem dogs which further indicates that behaviour problems are related to diet and not breed.

Most of the sample was aged 1 year or younger, indicating the majority of problems were encountered with adolescent dogs. This suggests that during growth and development dogs have a greater nutritional need than when mature. This explains the popular misconception that "all puppies and young dogs dig and chew but will grow out of it when they are older."

It is vital that the client is questioned *closely on every aspect of their dog's lifestyle* and behaviour. This is because questions asked during the consultation often bring to light secondary problematic behaviour which frequently reveals the true nature of the problem. Such undisclosed behaviour is often associated with the manner in which the dog eats its food- some dogs being very greedy which indicates insufficient food, or the fussy/picky eater which indicates the food is generally unacceptable to the dog. The success rate of the treatment supports the hypothesis that the satisfaction of physiological needs will alleviate problem behaviour to produce a calmer and more manageable dog.

The diet most favoured was generally higher in meat content and initially a greater amount was required than had previously been fed. Furthermore increased digestible protein rapidly stabilised behaviour indicating a greater amount was required for treatment of behaviour problems.

Literature on the subject reveals conflicting attitudes towards the effects of high protein diets on problem behaviour. Fisher (1995) outlines a case study in which he recorded the correct balance of proteins, fats and carbohydrates transformed a hyperactive dog into a calm dog. Mugford (1987) suggests changing from a low to a high protein diet may calm hyperactive dogs. However, Dodman et al. (1996) found that the effects of protein content on behaviour was not obvious, except that territorial aggression was reduced in dogs fed on a high protein diet. Dodman et al. (1996) criticised results of studies showing the effects of diet change on behaviour because they noted that such changes were often accompanied by behaviour modification and/or a change in the owners' routine. The present study suggests that in some cases a dietary change is necessary for the correction of some behaviour problems. However, in most cases appropriate diet and restricted physical activity were sufficient to obtain acceptable behaviour.

The results of this study support the importance of diet in controlling problem behaviour. There is, however, a need for more study on this topic which, under traditional, scientific, controlled conditions will prove difficult, bearing in mind the individuality of the dog in relation to its dietary requirements. The more evidence that can be gained from different sources, the closer we will come to providing physiological satisfaction and a world of problem free dogs.

References

- Campbell, WE. (1975). Behaviour Problems in Dogs. American Publications Inc., California.
- Dodman, NH., Reisner, I., Shuster, L., Rand, W., Luescher, UA., Robinson, I., Houpt, KA. (1996). Effect of dietary protein content on behaviour in dogs. JAVMA. 208(3):376-379.
- Fisher, J. (1995). Think Dog. An Owners Guide To Canine Psychology. Blandford, London.
- Hughes, BO. and Duncan, IJH. (1988). The notion of ethological 'need', models of motivation and animal welfare. Anim. Behav., 36: 1696-1707.
- Mugford, RA. (1987). The influences of nutrition on canine behaviour. J. Small Anim. Pract., 28: 1046-1055.
- Neville, P. (1991). Do dogs need shrinks? Sidgwick and Jackson, London.
- O'Farrell, V. (1989). Problem Dog Behaviour and Misbehaviour. Methuen, London.