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Feline medicine

Feline behaviour: Medical differentials for behavioural disorder
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Introduction
Illness underlies a significant proportion of behavioural problems sent for referral, often due to non-specific effects of pain or debilitation.

The commonest behavioural problems in the cat are house soiling and intercat aggression within the household.

In this lecture, I will talk about the non-medical causes of these problems, as well as two medical conditions that have a direct impact on them:
- Feline interstitial cystitis (FIC)
- Feline hyperaesthesia syndrome (FHS)

Environmental issues
The dog is an obligate social species, which has evolved patterns of communication and social bonding that strengthen cooperative behaviour that is necessary for group survival. Each dog is reliant on the group, and its social contacts. The cat is a facultative social species that is capable of group living, but does not have an innate requirement for social contact. Each cat is reliant on its environment and the resources that it is personally able to exploit.

![Figure 1: Environmental factors](image)

For each cat a balance has to be struck between requirements for social contact, resources, space, and outlets for normal behaviour (figure 1), with some individuals being more able to cope with compromise in one area than another. This determines their response to the fixed environment provided for them by the owner.
In a domestic setting, the environment is often deficient:

- Limited space and outdoor access.
- Multiple-pet, multiple-species household.
- Restricted resource availability.

The degree to which these issues affect an individual cat depend on its personality, sociability, socialisation history and preferences.

**Disease-environment interaction**

Conditions such as FIC vary in severity according to environmental factors, and in fact the recommended treatment of FIC follows the MEMO model [1]. It is possible for different disease phenotypes to be expressed (for the same disease) in different environments, particularly when the disease is partially characterised by behaviour. Manipulating the environment is also a way to alter disease phenotype and potentially reduce disease (figure 2).

![Figure 2: effect of environment on disease phenotype](image)

**FIC**

The precise aetiology of FIOC is not fully understood, but the indication is that it results from a combination of altered urothelial function and spinal cord neuronal signalling [2]. It is a naturally occurring model for human interstitial cystitis. Affected individuals of both species appear to show hypervigilance, increased sensory and sympathetic nervous system activity and decreased adenocortical function [3]. Affected cats show an increased acoustic startle response [2], which would be expected to alter their response to situations.

In the case of FIC, the two main causes for presentation to the veterinary clinic are signs of severe bladder disease (dysuria, obstruction etc), and house-soiling. Clearly these are very different presentations. Latrine use is affected by availability, the confidence of the cat to use the available latrines and the presence of competitors, so that house-soiling may be more likely in an indoor-only cat in a multi-cat household with a single litter tray. Altering such an environment could remove the house-soiling element of the presentation, as well as reduce stress and the severity of FIC (according to the MEMO model).

**FHS**

The behavioural signs of FHS are often regarded as quirky or amusing by owners until they becomes serious enough for the cat’s behaviour to become distressing or
self destructive. Again, the precise aetiology is not fully understood, and FHS may be an endpoint presentation for several different disease pathologies, including neurological and dermatological. Usually FHS presents as episodes of abnormal behavior/activity that can sometimes be initiated by physical contact [4]. Signs include excessive grooming and self-mutilation, skin rippling, tail swishing, frantic licking/chewing, manic episodes of chasing and running. The typical age of onset is 1-4 years of age, and there is some breed predisposition. Since the episodes are triggered by physical contact, bouts may be triggered by allogrooming and allorubbing, which are necessary parts of feline communication and social bonding. During bouts of FHS, cats may become aggressive and irritable, causing fights between cats when they groom or play with each other; this can lead to the breakdown of the relationship between cats that have previously enjoyed each other company. FHS is probably an under-diagnosed cause of intercat aggression, particularly between littermates from affected breeds.


