

Domestogenic Diseases

Michael. W. Fox, Editor-in-Chief

The term 'iatrogenic disease' refers to a variety of disease states which may result from a certain course of treatment. Iatrogenic diseases have important legal and ethical implications. Their identification has done much to further the recognition by the medical profession of the patient's right to informed consent. For example, the iatrogenic effects of cancer chemotherapy or of some new surgical or medical procedure may cause considerable physical and psychological suffering. Certain drug combinations or idiosyncratic patient reactions may have serious iatrogenic consequences, and under most circumstances, the patient should be warned if such sequelae might occur.

The concept of iatrogenic disease needs further expansion and refinement in relation to animals and their welfare. Steen Bech-Nielson (*JAVMA* 175:1304-1307, 1979) has discussed the significance of nosocomial disease, those hospital-acquired ailments associated with veterinary care. Another category, which might be termed 'domestogenic animal diseases' exists, and their recognition has considerable relevance to animal welfare. As the term 'iatrogenic' conveys the clinical treatment-induced nature of the problem, the term 'domestogenic' similarly implies that there are variables in animal husbandry which act as agents in the etiology of disease states or disease susceptibility, and that animal care technologies may exacerbate certain of these disorders.

A great range of inherited anomalies such as hip dysplasia in German shepherds, achondroplasia in Bassett hounds, strabismus in Siamese cats, unstable temperament in purebred dogs, flightiness in poultry and the porcine stress syndrome are essentially breeder-created or environmentally influenced.

Such anomalies are either absent or occur at an extremely low frequency in wild species, most probably due to a combination of factors such as hybrid vigor and rigorous natural selection. When these factors are attenuated or eliminated through selective breeding, genetically anomalous and phenodeviant forms appear with increasing frequency, either inadvertently or through deliberate selection for reasons of taste or utility. Hip dysplasia is an inadvertent consequence of selecting for sloping hindquarters in German shepherds. The metabolic and neuro-endocrine disorders of certain lines of dairy cattle (termed 'production diseases' by Professor David Sainsbury) are associated with exceptionally high milk yield.

Some of these genetically based anomalies may be either buffered or aggravated by the way the animal is raised, handled, housed and fed. For example, while the porcine stress syndrome is absent in some breeds of pig, it is present in others such as the Pietrain and may be intensified by infrequent handling and total confinement housing. As Sir Kenneth Blaxter has shown (*Vet Rec* 103:323-324, 1978), extremely complex disease states can be created by a combination of factors in the technology of animal care and production such as genetic lineage, the presence or absence of antibiotics or essential nutrients in the feed, feed contaminants such as aflatoxins and enterobactins, and the husbandry system under which the animals are kept (e.g., stocking density, humidity and ventilation).

Recognition of domestogenic diseases could do much to improve the welfare of farm and companion animals. The concept not only provides a holistic view of many animal diseases and structural/functional disorders, it also focuses greater responsibility for care on the pet owner, breeder and livestock manager by emphasizing that few diseases have a simple, specific cause which can be corrected either with surgery or with drugs, both of which can have additional untoward iatrogenic consequences.

The Benefits of Tender Loving Care

Walter B. Gross, Editorial Advisory Board

Tender loving care (TLC) as a disease control measure is sometimes considered a relic of the days before the advent of wonder drugs. In fact, TLC is still a very important feature in disease control and treatment. As applied to animals, TLC infers gentle, compassionate care. Not only is the animal unafraid of the handler, it also welcomes the handler's presence.

The majority of people oppose inconsiderate handling of animals on moral and ethical grounds. This opposition is easier to maintain when one is well-fed and remote from animals or interacts with only a few animals. On the other hand, it becomes more difficult when one works with large numbers of animals and is under increased pressure to get the work done. When an animal does something which irritates the handler, such as moving at a critical moment, it is easy to react violently toward the animal as a means of discouraging such actions, or relieving frustrations. Following such treatment, the animal becomes fearful of the handler and thus even more difficult to handle. If one does not understand their behavior and appreciate their social needs, one can easily adopt the view that animals are unfeeling creatures.

Millions of animals are employed annually in research projects and testing programs. Often, their caretakers have little real interest in the results. To them, it is a job to be done as quickly and as easily as possible. Furthermore, researchers and directors of testing programs gain little or no prestige from the time spent working directly with animals. Their administrative requirements and laboratory duties may leave little time for developing a relationship with the animals. It is thus understandable how laboratory animals can be reduced to things to be utilized as required. Humane societies have helped the welfare of animals by promoting standards for space, ventilation, sanitation and nutrition. However, they have also encouraged the "thing" attitude by focusing attention on physical requirements.

Recently, Drs. Cornhill, Nerem and Levesque (Ohio State University) reported that rabbits which were given TLC had from 1/3 to 1/2 the amount of atherosclerosis while being fed a high level of cholesterol than unhandled rabbits on the same regimen. They suggested that TLC, or the lack of it, could alter the results of other experiments.

Our research has shown that chickens which are frequently gently handled before and during experiments are superior experimental animals. Their